



ANNUAL REPORT
OF THE
CITY ENGINEER
OF
TORONTO
FOR
1904.



TORONTO:
THE CARSWELL CO., LIMITED, CITY PRINTERS, 28-30 ADELAIDE ST. EAST
1905.

81210

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11 JUL 1905

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TORONTO.

TOPOGRAPHY.—The City of Toronto is situated upon the northern shore of Lake Ontario, about forty miles easterly of its western terminus. It lies in latitude $43^{\circ} 39' 10''$ north, longitude $79^{\circ} 23'$ west, on a plateau gently ascending north for a distance of three miles, where an altitude of about 220 feet above the lake level is reached. It extends about eight miles along the lake, and is generally level, with slight depressions at points where minor water courses previously existed. The harbor is formed in front of the City by a sandy island, which lies to the south, at a distance of about a mile and a half.

Toronto is the capital of the Province of Ontario, and in it are situated the Provincial Parliament Buildings and Government House the residence of the Lieutenant-Governor of the Province.

STATISTICS.

AREA.—The area within the City limits, not including the portions of the City land covered by water, is 17.42 square miles.

POPULATION.—The population of the City, according to the census taken by the Directory Company at the end of 1904, was about 293,395.

PUBLIC STREETS AND LANES.—Within the City limits there are 265.45 miles of streets and $84\frac{1}{4}$ miles of lanes, of which 189.65 miles are paved, and 75.80 miles unpaved.

PAVEMENTS AND ROADWAYS.—

Asphalt.....	52.10 miles
Cedar block.....	54.33 "
Brick	15.53 "
Macadam	54.56 "
Wood on concrete	0.26 "
Stone and scoria block	1.11 "
Gravel	5.83 "
Bitulithic.....	1.52 "
Tar macadam.....	4 20 "

SIDEWALKS.—

Stone flag.....	1.821 miles
Concrete.	146.473 “
Brick.....	3.196 “
Wood	275.000 “

SEWERAGE.—The City is drained by what is known as the combined system of sewers, and there are 240.31 miles of sewers.

WATER WORKS.—The Water Works system is owned and operated by the City, the supply being obtained from Lake Ontario through a 6-ft. steel conduit laid across Toronto Island to a crib near Hanlan's Point, and from thence through a 4-ft. steel pipe, and a 3-ft. cast iron pipe laid under Toronto Bay to the Main Pumping Station on the water front, the water being pumped through the City mains, the surplus going to the Reservoir situated north of the north City limits. Cost of system to date, about \$4,000,000.

STATIONS AND ENGINES.—

Main Pumping Station.

No. 1 Engine,	4,000,000 gals. capacity, 24 hours.
“ 2 “	8,000,000 “ “ “
“ 3 “	8,000,000 “ “ “
“ 4 “	10,000,000 “ “ “
“ 5 “	10,000,000 “ “ “
“ 6 “	15,000,000 gals. under construction.

High Level Pumping Station.—Two engines with a total capacity of 6,000,000 gallons in 24 hours.

Island Pumping Station.—One engine 500,000 gallons capacity in 24 hours.

272.853 miles of water mains.

50,847 water services.

3,205 street hydrants.

2,531 valves.

2,043 meters in use.

WATER RATES.—Average schedule, 2½ cents per 1,000 gallons. and by meter, 10c. per 1,000 gallons.

43,000 water takers.

Pressure—Domestic and fire, 75 to 90 lbs.

Average quantity pumped in 24 hours, 24,799,758.	
Water consumed annually, 9,077,524,680 gallons.	
Fuel used—soft coal screenings.	
Cost of fuel during 1904, \$55,784.05.	
General receipts, constructing and moving services, etc..	\$ 16,113 18
Revenue collected in 1904 by schedule rate.....	178,169 03
“ “ “ meter rate.....	161,745 70
Charges made against different branches of City service for water used	77,063 00
Total.....	<u>\$ 433,090 91</u>
Operating expenses, including cost of collecting rates and debt charges	
House services and pipe laying, etc., etc., etc.	\$438,363 46
House services and pipe laying, etc., etc., etc.	335,152 67
Total.....	<u>773,516 13</u>

FIRE PROTECTION.—

208 officers and men in brigade,
 65 horses.
 59 pieces of apparatus for various purposes.
 3,205 fire hydrants.
 17 fire stations.
 5 steam fire engines.

POLICE PROTECTION.—

325 officers and men.
 1 headquarters and 7 stations

MILITARY.—There are two regular corps stationed in the City (one mounted and one infantry), at Stanley Barracks, near the site of old Fort Rouille, and five militia corps (two mounted and three infantry), all of which have first-class bands and the use of well-equipped and commodious Armouries.

LIGHTING.—There are 3 lighting companies doing business in the City. The Consumers' Gas Co have 295 miles of mains, and 38,646 consumers. Carbon Light & Power Company have 964 street lights. Toronto Electric Light Company have 1,220 street electric arc lights, 750 private business arc lights, about 150,000 private

business incandescent electric lights, and also 960 miles of overhead and underground wire, and 55 miles of underground conduit.

TELEPHONE AND TELEGRAPH SERVICE.—The Bell Telephone Company is the only company doing business in the City. They have 14,500 telephones in use, 14,000 miles of overhead, 23,000 miles of underground wires, 15 miles of underground conduit, and 145 miles of ducts.

There are two telegraph companies doing business in the City, the Great North-Western Telegraph Company, with 70 sets of instruments and 250 miles of overhead wires; and the Canadian Pacific Railway Telegraph Company.

PUBLIC PARKS.—The Public Parks of the City are under the control of the City Council. There are 21 public parks, having a total area of about 1,458½ acres.

EDUCATION.—The educational system is under the direction of the Board of Education and the Separate School Board. There are 59 public schools, having a total of 605 rooms, with a staff of 697 principals and teachers. Three collegiate institutes with a staff of 60 principals and teachers. Eighteen separate schools with a staff of 99 principals and teachers.

2 Industrial Schools (Protestant.)

1 Industrial School (R. C.)

30 Colleges, Seminaries and Pay Schools.

1 Technical School.

5 Universities.

3 Cathedrals of all denominations.

209 Churches of all denominations.

2 Synagogues and several Jewish Churches.

48 Missions.

5 Mission Training Schools.

9 Convents.

PUBLIC LIBRARY.—There is one Central Reference and Circulation Public Library, and six Circulation Libraries, all under the control of the Public Library Board. There are 117,127 volumes in circulation.

PUBLIC INSTITUTIONS.—

62 Hospitals, Asylums and Public Homes.

3 Institutions for destitute and criminal classes.

LAW.—Toronto is the centre of the Law System of the Province of Ontario, having 27 Law Courts within its limits.

AMUSEMENTS.—

5 Theatres.

22 Music and Concert Halls.

238 Public Buildings, Halls, etc.

PUBLIC ACCOMMODATION.—

184 Hotels.

2,600 Boarding Houses.

RAILWAYS.—There are two railway companies whose systems enter Toronto, namely : the Grand Trunk Railway, with about 85 miles of tracks laid in the City limits.

The Canadian Pacific Railway Company, with about 31 miles of tracks laid in the City limits.

94 Passenger trains enter and leave the City daily.

180 Freight trains enter and leave the City daily.

The Toronto Railway Company has the exclusive franchise for operating a street railway system within the City limits. They have 90.936 miles of tracks, about 305 cars in operation, and carried 60,127,460 passengers during 1904.

BUSINESS.—

6 daily newspapers; 49 weekly; 20 semi-monthly; 76 monthly, and 8 quarterly newspapers and periodicals; two directory companies.

5 Public markets.

33 Banks, not including branches.

800 Factories and manufactories.

375 Wholesale houses.

3 Departmental stores.

6,500 Miscellaneous business companies, corporations and stores.

SANITATION.—

Street Cleaning, Watering and Scavenging.—A modern and complete system of street cleaning, watering and scavenging is owned and operated by the City.

The supervision of the sanitary requirements of the City is under the control of the Local Board of Health.

The foregoing brief review of Toronto is annually compiled by

GEO. J. CASTLE,

Secretary to City Engineer.

PAST CITY ENGINEERS OF TORONTO.—

1840-1842, Thomas Young.

1843-1852, John G. Howard.

1853, William Thomas.

1854, John G. Howard.

1855, William Kingsford.

1856, Thomas H. Harrison.

1857-1858, Thomas Booth.

1859-1860, Alfred Brunel.

1861-1870, J. H. Bennett.

1871-Oct., 1875, Chas. W. Johnston.

Oct. 1875-July, 1880, Frank Shanly.

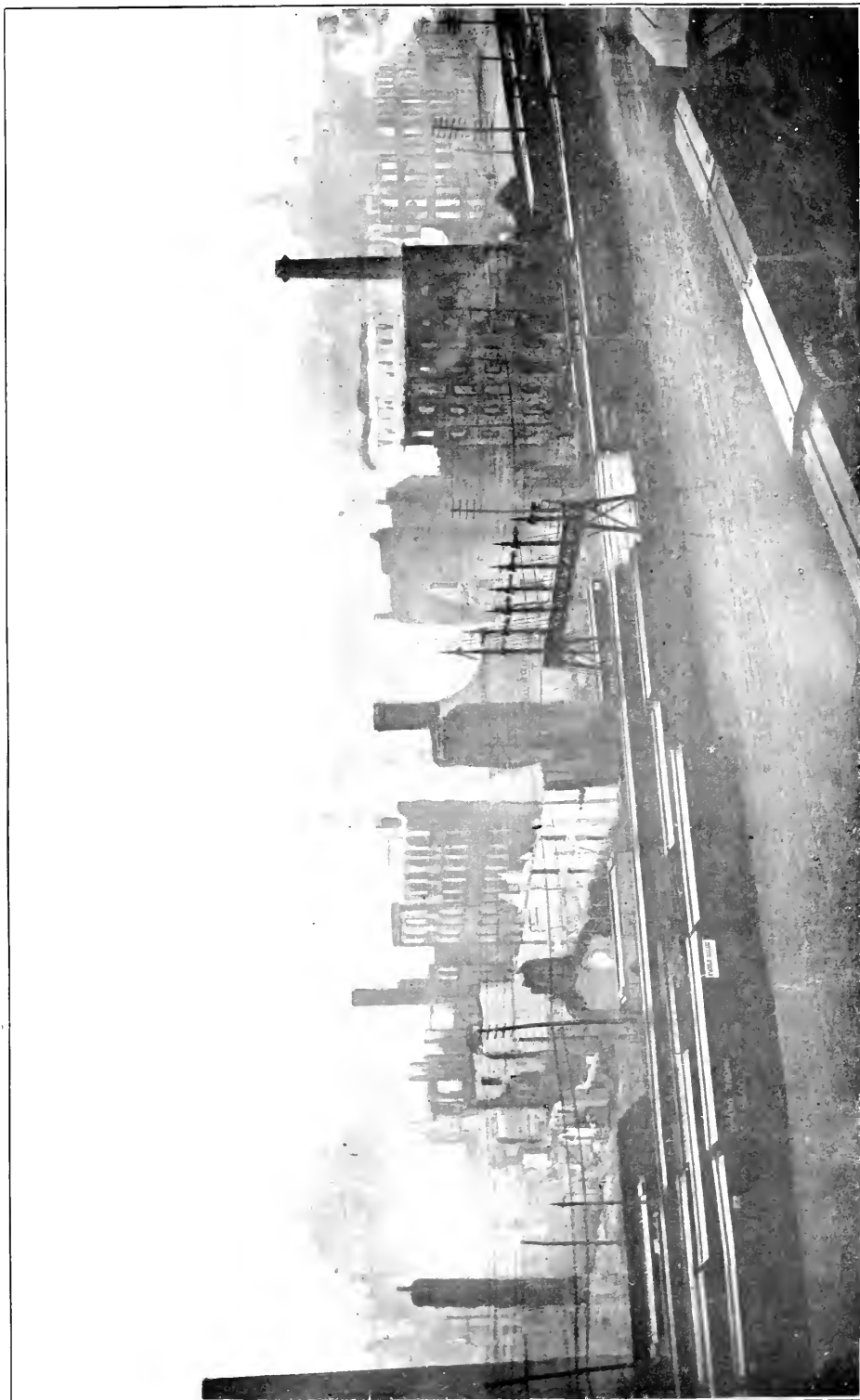
Sept. 1880-July, 1883, R. J. Brough.

Oct. 1883-1889, Charles Sproatt.

1890-Sept., 1891, W. T. Jennings.

Sept. 1891-May, 1892, Granville C. Cunningham.

May, 1892-Jan., 1898, E. H. Keating.



LOOKING NORTH FROM COBBAN FACTORY, SHOWING FIRE AREA.

ANNUAL REPORT

OF THE

CITY ENGINEER

OF THE

CITY OF TORONTO

FOR THE YEAR 1904.

CITY ENGINEER'S OFFICE,
Toronto, December 31st, 1904

*To His Worship the Mayor and Members of the Council of the
Corporation of the City of Toronto:*

GENTLEMEN,—In compliance with By-law No. 2534, I have the honor to lay before you the Annual Report of the Department for the year ending 31st December, 1904, setting forth the various works carried out during the year, with details of cost of construction, and suggestions and recommendations as to new works and improvements required.

OFFICIAL STAFF.

The following is a list of the chief officials of the Department:

City Engineer and Chief Engineer and Manager of the Water Works	Charles H. Rust, M. Can. Soc. C.E., M. Am. Soc. C.E.
Deputy City Engineer.....	C. L. Fellowes, C.E.
Asst. Engineer (resigned Sept. 15th).....	C. W. Dill, A. M. Can. Soc. C.E.
Asst. Engineer (appointed October 1st)	W. M. Macphail, M. Can. Soc. C.E.
Asst. Engineer.....	J. Williams, M. Can. Soc. C.E.
Asst. Engineer.....	W. A. Clement, M. Can. Soc. C.E.
Street Commissioner	John Jones.
Asst. Street Commissioner.....	Wm. J. Evans.
Accountant	Wm. McCartney.
Chief Clerk	E. P. Roden.
Secretary Committee on Works.....	A. H. Clarke.
Secretary to City Engineer.....	Geo. J. Castle.
Chief Engineer Main Pumping Station.....	Alex. McRae
Chief Engineer High Level Pumping Station..	Thos. Walsh.
Foreman of Water Works Construction..	Edward Foley.

WATER WORKS REPORT.

For Water Works matters see separate report.

WORKS DEPARTMENT.

FINANCIAL.

During the year the total expenditure of the Department, not including Water Works, was \$1,054,039.14, which was divided as follows:

General and special works	\$440,347 24
Street railway track allowance pavements.....	11,364 92
Local improvements (including street extensions)..	526,422 13
Departmental and sundry accounts	71,757 66
Island works.	4,147 19
Total	\$1,054,039 14

The amount expended for Local Improvement Works was divided as follows:

Pavements and roadways	\$344,818 79
Concrete and brick sidewalks.....	151,563 20
Plank sidewalks.....	7,584 40
Sewers.....	20,451 20
Street openings and extensions.....	2,004 54
Total	\$526,422 13

The total amount expended by the Department during the year, including Water Works expenditure, was \$1,578,252.33.

On the evening of the 19th of April a fire broke out on the north side of Wellington Street, which was not under control until 5 o'clock the following morning. The result was the total destruction of 98 buildings within an area of 20 acres. The value of the property destroyed was approximately \$10,500,000. There were about 50 nozzles playing on the fire, and during the first 12 hours a total of about 6,480,000 imperial gallons of water was used. During a period of 6 days after the fire a great deal of water was running to waste owing to the number of service pipes that were broken by falling walls, etc., it being impossible to get at them to cut them off. This heavy drain and the streams of hose in use for several days resulted in the reservoir being almost emptied, and it was not until April 25th that normal pressure was restored and the water in the reservoir began to rise. On April 19th, immediately prior to the



NORTH SIDE FRONT STREET, SHOWING CAST IRON COLUMNS.

fire, the pressure at the City Hall recording gauge, which is about 2,400 feet north of the fire district, was 75 lbs. This was reduced to 44 lbs. on the 24th of April. The pressure in the fire district would be 6 to 10 lbs. more than at the City Hall.

Immediately after the fire, the Department commenced the work of cleaning the streets, and were also instructed by the Board of Control to take steps to remove the dangerous walls, which was done with dynamite. This work was very hazardous, and we were fortunate in only having one or two slight accidents. Photographs are attached showing portions of the area destroyed.

GRADE CROSSINGS, ETC.

I regret to report that during the year very little progress has been made in the matter of abolishing the grade crossings within the City limits. Prompt action should be taken in this matter, as a number of these crossings are very dangerous, the Queen Street East Crossing at DeGrassi Street and the Queen Street West Crossing at Sunnyside being a special menace to the public safety. During the year plans were prepared for the construction of the proposed subway at Queen Street East. Plans were also prepared in connection with the proposal to raise the present Queen Street bridge at the Don River, carrying Queen Street over the railway tracks, and construct a viaduct. Both these matters have been referred to the Assessment Department to prepare an estimate of the damage that will be occasioned to the adjoining property.

The grade crossing upon Bloor Street west of Lansdowne Avenue should also be abolished.

In connection with lowering the G. T. R. tracks through South Parkdale, matters have not progressed very far. Mr. F. H. McGuigan, Manager of the Grand Trunk Railway Company, has promised to submit to this Department at an early date, plans showing the proposed alteration to these tracks. If the Company are not prepared to take this matter up shortly, I would recommend that an application be made to the Board of Railway Commissioners to have all the grade crossings through South Parkdale eliminated by the lowering of the tracks.

The question of constructing a viaduct along the Esplanade has also been brought to the attention of the public. Although this is a

good suggestion, the cost would be very heavy and I do not consider that it should be carried out unless the Railway Companies are prepared to bear the whole cost of the work. I do not consider that the danger of grade crossings along the Esplanade is nearly as great as at a number of other crossings within the City limits. While this viaduct would meet the requirements of all through trains, there are a large number of industries situated on the north and south sides of Esplanade Street which would still require to be served by tracks constructed at grade.

The question of a Subway at Lansdowne Avenue will soon be brought before the Railway Commissioners, and I trust that during the coming year, this work will be proceeded with.

Although an order was issued by the Railway Committee of the Privy Council for the construction of a bridge over the Railway tracks at the foot of Yonge Street, the Railway Companies have appealed against the order, and the matter is now in litigation. This is much to be deplored, as the pedestrian and vehicular traffic across the tracks at this point, is rapidly increasing, and the Toronto Railway Company have declined to proceed with the extension of their tracks to Lake Street, which extension is very necessary, until the Yonge Street bridge is constructed.

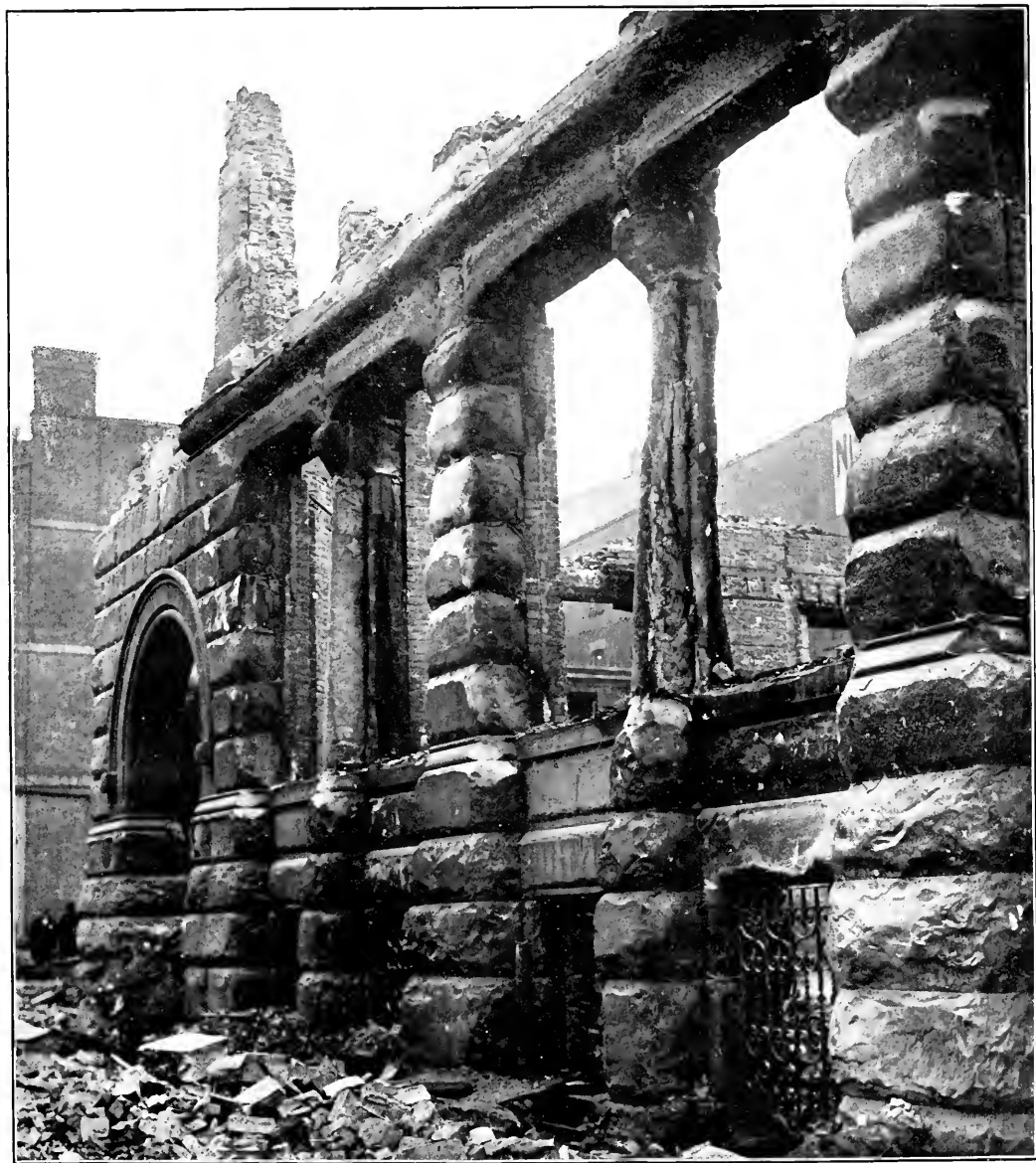
SEWAGE DISPOSAL.

Very little progress has been made in the matter of the disposal of the sewage of the City. The Provincial Board of Health have asked the Department to furnish them with samples of sewage from the different sewers for the purpose of analysis, which is being done.

The proposed sewage disposal scheme for the district of the City east of the Woodbine, is still pending owing to the property owners petitioning against the former recommendation. Arrangements, however, have now been made so that the work will probably be proceeded with during the year 1905.

STREET RAILWAY MATTERS.

On the 11th of April, 1904, a time table for the running of the street cars was recommended by the City Engineer and adopted by the City Council. Since the 25th of April a daily record has been taken of the service provided by the Company, which during the ordinary hours of the day is almost up to the requirements of



EAST SIDE OF BAY STREET, SHOWING EFFECT OF FIRE
ON GRANITE COLUMNS.

the time-table, but during the rush hours, viz.: from 5 to 6.30 p.m. there is still a great deal of overcrowding. Actions are now before the Courts to compel the Company to carry out this time-table, and also to proceed with a number of extensions, which have been recommended by the City Engineer and adopted by the Council at various times. The gathering of these statistics and other information in connection with street railway matters entailed an expenditure of \$6,000.

During the year the Company constructed about 35 additional cars, and laid some underground work preparatory to using current from Niagara Falls, and for the purpose of connecting the Transformer House in the northern part of the City with their present Power House, the work being inspected and laid out by this Department. They also replaced the rails upon Yonge Street, from Queen Street to Carlton Street, which were laid in 1892, by new 90-lb. rails. The rails upon a number of other streets in the City also require to be renewed.

The public were put to considerable inconvenience during the winter owing to the failure of the Company to provide sufficient motive power.

The following table shows the mileage of the street railway tracks, and the number of passengers carried from 1892, when the system was converted into an electric road, up to the end of 1904 :

	Mileage of Tracks. Passengers Carried.		Population.
1904.	92.93 miles.	60,127,460	293,395
1903.	92.78 "	53,055,322	250,757
1902.	90.09 "	44,437,678	237,144
1901.	88.91 "	39,848,087	221,583
1900.	85.06 "	36,061,867	214,967
1899.	85.00 "	31,826,940	208,340
1898.	84.83 "	28,710,388	201,439
1897.	86.14 "	25,271,314	197,826
1896.	85.28 "	23,537,911	192,440
1895.	85.22 "	23,353,228	191,007
1894.	81.43 "	22,609,338	188,914
1893.	78.84 "	21,215,010	188,914
1892.	70.42 "	19,122,022	188,914

The following table shows the iron street railway poles erected during the year, giving the street and number of poles, and also the number of poles painted :

Bathurst Street, Bloor to north end.	56	} To replace wooden poles.
King Street, Dufferin to Dunn Avenue.....	22	
King Street, Parliament to Don	45	
Winchester Street, Parliament to Sumach.....	24	
Total	147	

Also the following iron trolley poles were painted during the year :

Frederick and King Streets	3
Church and King Streets	3
King Street, Simcoe to Spadina.....	40
King Street, west from Spadina.....	34
King Street, east from Dufferin	33
King Street, east from Roncesvalles	42
King Street, east from Parliament	45
Arthur Street, Bathurst to Ossington Avenue	66
College Street, east from Spadina Avenue.....	60
Parliament Street, north of Carlton Street.....	15
Church Street, south from Bloor Street.....	28
Church Street, north from Front Street.....	33
Winchester Street, Parliament to Sumach	26
Total.....	428

ISLAND MATTERS.

During the year considerable damage was done to the south shore of the Island by the washing away of the beach, owing to the extremely high water. The Government, however, have agreed to extend the breakwater westerly to prevent any further inroads. From the proposed terminus of this extension to the Lighthouse point, I recommend that either the Government or the City construct 7 or 8 groynes to prevent any further washing away of the shore. There is no doubt that since the construction of the piers at the Eastern Gap, a large amount of sand, which was formerly deposited along the south shore of the Island, is now intercepted by the easterly pier. This has probably had a great deal to do with the washing away of the beach west of the breakwater.

SURVEY OF THE BAY.

The survey of Toronto Bay, comprising a very complete record of the depth, which was commenced in 1903, was completed during the winter of 1904.



NORTH SIDE OF FRONT STREET, SHOWING EFFECT OF HEAT
ON RAILS AND PAVEMENT.

ELECTRIC LIGHT WIRES, POLES, ETC.

During the year the Toronto Electric Light Company constructed underground conduits on 15 streets, being a total length of 343,118 feet, and 60 concrete manholes, and the Bell Telephone Company laid underground work upon 7 streets, or a length of 35,157 feet.

TEMPERATURE AND RAINFALL.

Through the courtesy of Mr. Stupart, Director of the Meteorological Department, I attach a table showing the temperature and rainfall during the year.

PRECIPITATION,—TORONTO, 1904.

Month.	Rainfall.	Snowfall.	Total Precipita- tion.	Rainfall.		Snowfall.	
				Heaviest in 1 day	Date.	Heaviest in 1 day	Date.
	inches.	inches.	inches.	inches.		inches.	
January	0.520	18.7	2.390	0.520	22	6.0	26
February... ..	1.090	19.1	3.000	0.450	1	9.4	29
March	2.315	6.0	2.915	0.650	3	2.7	18
April.....	2.640	4.7	3.110	0.610	1	3.0	15
May.....	3.795	.....	3.795	1.630	18	.....	.....
June.....	2.770	.....	2.770	0.850	9	.....	.....
July.....	5.125	.....	5.125	1.030	12	.....	.....
August	4.555	.....	4.555	1.680	20	.....	.....
September	3.990	.....	3.990	1.910	24	.....	.....
October.....	2.420	0.6	2.480	0.540	9	0.6	26
November	0.080	0.3	0.110	0.030	24	0.1	25
December.....	0.740	7.1	1.450	0.750	21	2.8	20
Year.....	30.040	56.5	35.690	1.910	.....	9.4	

SEWERS.

During the year 12,528 lineal feet of sewers of various kinds were constructed and a number of manholes, gullies, etc., built. There are now 240.31 miles of sewers of various kinds throughout the City. Thirteen sewers were constructed by the Department by day labor during the year, and a table is attached to the report of the Assistant Engineer in charge of sewers showing this work in detail, which resulted in a small saving to the City.

During the year 36,594 feet of 6-inch, 2,512 ft. of 9-in., and 66 ft. of 12-inch house drain was constructed by the Department for private parties, from a connection with the main sewer to the

property line. This makes a total of 39,172 lineal feet of this work against 26,370 feet constructed in 1903, which is a good indication of the number of new buildings being erected.

DREDGING SLIPS.

Silt to the amount of 17,132 cubic yards was dredged from the various slips into which the main sewers empty, and deposited in the lake a distance of about eight miles from the harbour.

ROADWAYS AND SIDEWALKS.

During the year the Roadway Department carried out 336 separate works and 62 private permanent walks, or a total of 398 works, being an increase of 31 over 1903, 74 over 1902, and 176 over 1901, and is the greatest number ever undertaken in one year by this Department. The work included the construction of 41.75 miles of pavements and 31.05 miles of concrete and brick sidewalks. In addition, the boulevards on a few of the streets, upon which sidewalks were constructed, were graded and sodded.

It will be seen by reference to the report of the Assistant Engineer in charge of Roadways that the mileage of pavements constructed this year is less than in 1903, but this decline is almost entirely in the less permanent class of pavements, more than one-half of the total decrease being in the cedar block pavement.

The practice of the City Engineer tendering upon all works in competition with contractors has been carried on with satisfactory results. The City Engineer's tender was the lowest on 59 contracts, and 22 were done by order of Council without calling for tenders. Of these 64 were carried out by Day Labour under his supervision, and the remaining 17 being constructed by contractors at the figures of this Department. Tables 10 and 11 show the cost of the works carried out by Day Labour, and by reference thereto it will be seen that the Department made a profit of \$6,545.

ASPHALT PAVEMENTS.

During the year there was a decrease in the cost of asphalt pavements, due mainly to the keen competition among the contractors. In 1901 the average price of the heavy asphalt was \$2.54 and light asphalt \$2.04 $\frac{1}{2}$. In 1904 the average price of heavy asphalt was \$2.22 $\frac{6}{10}$ and light asphalt \$1.65. Attached to the report of the



ST. GEORGE STREET, LOOKING NORTH, SOUTH OF DUPONT STREET.

Assistant Engineer is a table showing the average price per square yard of asphalt pavement from 1901 to 1904.

The Department have almost entirely discontinued the use of stone curb in favor of concrete for the various pavements, which results in considerable saving in the cost, and gives equally good results. We have also abandoned the use of wooden curbing.

BRICK PAVEMENTS.

There was some difficulty early in the season in procuring a sufficient quantity of bricks from the local companies, and we had to obtain a number from the United States. Owing to the difficulty of procuring sufficient bricks, and to the fact that the local companies are increasing the price, the Department are considering the advisability of abandoning the use of Canadian brick and purchasing paving blocks from the United States, the life-time of these blocks being longer and the cost very little in excess.

CEDAR BLOCK PAVEMENTS.

It is very satisfactory to notice the decline in the construction of cedar block pavements during the past four years. The cedar that is now used is not as good a quality as the material that we formerly obtained.

TAR MACADAM ROADWAYS.

Some of the tar macadam roads that have been constructed within the past three years are not satisfactory. Pavements upon which the greatest care was taken, both as to selection of material and method of construction, show signs of disintegration. There must be some inherent defect in the method of construction, and experiments are now being carried on to determine where the weakness exists. We propose to make a complete change in the specifications if the experiments are satisfactory.

In connection with ordinary macadam roadways, where the grade is very steep, we are using brick gutters with satisfactory results.

CONCRETE SIDEWALKS.

With the exception of 1903, the mileage of concrete sidewalks constructed is greater than any previous year, and the number of works carried out exceeds by 22 that of any previous year. Experi-

ments have been made in connection with coloring the surface of concrete sidewalks, but the results so far have been disappointing.

Only one short length of brick sidewalk was constructed. It has been found that these walks are very little cheaper than concrete and not as satisfactory.

BRIDGES AND WHARVES.

During the year the ordinary repairs to bridges and wharves have been carried out.

The Yonge Street wharf requires extensive repairs and it would be advisable to extend this wharf to the new windmill line. The roadway leading from Harbour Street to this wharf should also be reconstructed with a more durable class of material.

The Brock Street wharf also requires a considerable expenditure to be placed in a proper condition.

The various life-saving stations have been provided with the necessary appliances and some additional stations installed, which have been regularly inspected and any appliances broken or stolen have been replaced. In this connection I would recommend the purchase of a small gasoline launch to act as a patrol boat, and am of opinion that this work should be placed under the charge of the Police Department.

The free bathing stations situated at Sunnyside and the Island were well patronized during the year, and I consider the time has arrived when permanent and suitable bath-houses should be erected.

For details in connection with this work I would refer you to the report of the Assistant Engineer in charge of bridges.

STREET COMMISSIONER'S DEPARTMENT.

The report of the Street Commissioner, who has charge of the repairs to roadways and wooden sidewalks, street watering, street cleaning, snow cleaning and scavenging, dog-trapping, garbage destructors, street numbering, etc., is attached.

The removal of snow from sidewalks fronting vacant property is performed under the Statutes of the Province and the By-laws of the City. This work entails a very large amount of clerical work. During the winter of 1903-4 snow was removed from sidewalks representing a total of 362 miles.



VICTORIA STREET ASPHALT BLOCK PAVEMENT.

Under an arrangement made by the Toronto Railway Company the City cleans the snow from the streets upon which street railway tracks exist, of which the Toronto Railway Company pay one-third of the cost. I consider the Company should pay a larger portion of the cost and intend recommending during the coming year that the contract in this connection be cancelled and a new one entered into.

For further details in connection with these matters I beg to refer you to the report of the Street Commissioner.

WATER WORKS MATTERS.

On February 9th, 1903, a By-law was passed providing for the issuing of \$175,000 for the purpose of a new 15,000,000 imperial gallon pumping engine, for the Main Pumping Station. Tenders were received on June 15th, 1903, for this work and the contract awarded to John Inglis & Company for an Allis engine, for the sum of \$155,000. The sum of \$5,000 was allowed for No. 3 engine, which had to be removed, making the net price \$150,000. The old Inglis & Hunter engine, which was known as No. 3, and which was installed in 1885, was removed to provide accommodation for the new engine. The work of erecting a new building was undertaken by Day Labour by the Department and is now in progress and should be completed early in the year 1905. It is expected that the new engine will be in operation about September, 1905.

On April 11th, 1904, a By-law was passed providing for the sum of \$1,000,000 for the following Water Works Improvements :

New meters	\$ 50,000 00
Concreting sides and bottom of Rosehill Reservoir.....	35,000 00

Water Mains:

36-inch main, Bathurst Street, College Street to Rosehill Reservoir, 16,800 feet	190,011 00
24-inch main, Front Street, Church Street to Sumach, thence up Sumach Street to Queen.....	55,394 00
20-inch main, from High Level Station to St. George Street via Dupont Street, 1,080 feet ..	8,308 00
16-inch main, St. George Street from Dupont to Bloor, 3,150 feet	13,484 00
16-inch " Queen Street east, from Sumach to Don Bridge, 1,050 feet.....	4,809 00
16-inch main, Queen Street east, from Don Bridge to Broadview Ave., 1,050 feet.....	6,520 00
12-inch main, Strachan Avenue, from Wellington Ave. to Exhibition, 3,800 feet.....	10,604 00

12-inch main, Queen Street west, Dundas to Gladstone, 2,200 feet	6,464 00
12-inch and 6-inch mains at Dundas and Ruskin Avenue, to connect and improve pressure, 1,200 feet	2,015 00
High level district east of the Don, to improve pressure and supply	2,584 00
New 5,000,000-gallon pumping engine and boiler, building and equipment, High Level Pumping Station	50,000 00
6-foot steel pipe from shore crib to tunnel shaft, including masonry, valves, connections to basin and Hanlan's crib.....	200,000 00
Tunnel, including all connections, valves, etc	325,000 00
Totals.....	<u>\$960,193 00</u>

On November 14th, 1904, contracts were awarded for the laying of 16-inch and 20-inch mains.

For details in connection with Water Works matters I beg to refer you to the report of the Deputy City Engineer, who has charge of this work.

Respectfully submitted,

C. H. RUST,

*City Engineer and Chief Engineer
and Manager of Water Works.*



VICTORIA STREET ASPHALT BLOCK PAVEMENT.

PAVEMENTS, ROADWAYS AND PERMANENT SIDEWALKS.

CITY ENGINEER'S DEPARTMENT,

Toronto, December 31st, 1904.

MR. C. H. RUST,

City Engineer.

DEAR SIR,—The following report shows in general and detail the extent and cost of all work done under the supervision of the Roadways Branch of the City Engineer's Department of the City of Toronto for the Year 1904.

Three hundred and thirty-six separate works were undertaken and the construction of 62 private permanent walks superintended, making in all 398 works undertaken during the year. This is an increase in the number of works undertaken of 31 over 1903, of 74 over 1902 and of 176 over 1901, and is the greatest number ever undertaken by the Department in any one year. A summary of works follows:

Carried over from 1903	29
Contract Works	243
Day Labor	64
Private permanent walks.....	62
Total works undertaken.. ..	398

In addition to this the boulevards on a few of the streets on which sidewalks had been constructed were graded and sodded.

The work done included the construction of 14.756 miles of pavements and 31.059 miles of concrete and brick sidewalks. A reference to Table No. 2 will show that there is a decrease in mileage of pavements as compared with the year 1903, but this decrease is not at all to be deplored. An analysis of the table will show that the decrease almost altogether exists in the less permanent class of pavements, more than half of the total decrease being in cedar block pavements, which is a gratifying feature of the year's work. Cedar block shows a decrease of 71 per cent., macadam 29 per cent., tar macadam 57 per cent. In view of these marked decreases it is gratifying to note that asphalt almost held its own and bitulithic shows an increase of 94 per cent.

31.059 miles of concrete sidewalks were constructed during 1904. This shows a decrease of 11 per cent. as compared with 1903, but when compared with 1901 there is shown an increase of 43 per cent.

The system of the City Engineer tendering in competition with contractors has been continued this year, and the result has been satisfactory. His tender was found to be lowest on fifty-nine (59) contracts and twenty-two were done by order of Council without calling for tenders. Of these sixty-four were carried out as day labor works under the supervision of the Department, while the remaining seventeen were done by contractors at the Engineer's contract prices, thus effecting a very substantial saving to the ratepayers. Tables 10 and 11 show the actual cost of these works, also the loss or gain when compared with the next lowest contractor's tender.

The following table classifies the various works constructed during the year 1904, showing an increase over 1903 of thirty-one in the number of works constructed under the direction of this Department.

TABLE No. 1.

<i>Class of Work.</i>	<i>No. of Works.</i>
Asphalt	33
Bitulithic	4
Brick on concrete	12
Concrete	1
Cedar block on sand	3
Macadam	14
Tar macadam	8
Construction of new track allowance	1
Reconstruction of track allowance (brick, scoria and concrete)	4
Grading	2
Brick sidewalks	1
Concrete sidewalks	247
Private contracts (sidewalks)	62
Concrete and stone curbing	6
Total	398

In connection with pavements and sidewalks, including those proposed but not carried out, the following numbers of plans, drawings and estimates were made :

Plans	89
Detailed drawings	13
Estimates	447

TABLE No. 2.

MILEAGE OF DIFFERENT CLASSES OF PAVEMENTS, ROADWAYS AND SIDEWALKS LAID FROM 1890 TO 1904.

Class of Work.	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Pavements and roadways:															
Asphalt.....	1.73	1.635	6.216	5.697	3.067	1.156	0.366	0.460	3.408	6.215	6.348	4.449	5.237	6.662	6.336
Brithide.....														0.063	1.109
Cedar block on sand and plank foundation.....	15.51	9.186	3.349	3.249	0.852	1.733	0.428	2.459	4.831	3.151	7.842	2.725	2.191	1.774	0.511
Macadam.....		0.123	0.494		0.059	1.663	1.661	0.510	2.089	5.013	2.563	2.733	5.486	2.737	1.940
Tar macadam.....											0.068			2.148	0.920
Cobble.....	0.10	0.069	0.366								0.067			0.216	
Tunarae on concrete.....	0.192	0.077							0.084	0.079		6.021		0.069	
Cedar block on concrete.....			8.416	2.185	0.826	0.227	0.038				0.107	0.028		0.427	
Stone setts on concrete.....			0.705	3.743	2.563	0.085			2.986	1.367	1.247	0.069			0.613
Scoria blocks on concrete.....	0.138					0.117			6.079	3.670	5.472	2.885	4.272	2.602	2.876
Brick on concrete.....				3.964	0.787	0.744	1.032	0.838	0.352	0.943	0.057				
Brick on gravel.....							0.028			0.546	0.516	1.627			
Brick on broken stone.....									0.057				0.041	0.147	0.053
Concrete pavements.....						0.071			4.756	0.069	0.363	0.222			
Gravel.....								3.138							
Concrete in track allowance.....											0.203	0.270	0.186		0.398
Totals.....	17.670	11.090	19.574	18.748	8.134	5.816	3.553	13.298	24.642	21.120	24.666	15.629	17.413	16.839	14.756
Sidewalks:															
Concrete.....	1.426	1.930	1.508	2.259	1.137	1.918	0.612	1.050	2.548	5.474	15.227	17.305	27.360	34.896	31.058
Stone flag.....	1.273	0.398	0.104	0.035	0.011					0.292	0.038	0.511	0.049	0.093	0.001
Brick.....							0.204	0.823	1.188						
Totals.....	2.699	2.328	1.612	2.294	1.148	1.918	0.816	1.873	3.736	5.766	15.265	17.816	27.409	34.989	31.059

The first pavements laid under the Local Improvement system were constructed during the year 1881, and the annual variation in mileage of paved and unpaved streets with classification of same, up to the end of 1904, is shown in the following Table No. 3:

TABLE No. 3.										
SHOWING THE DIFFERENT CLASSES OF PAVEMENTS AND ROADWAYS AND MILEAGE OF SAME FROM 1881 TO 1904.										
Year.	Cedar Block.	Stone and Scoria.	Asphalt.	Wood on Concrete.	Macadam.	Bitum. Macadam.	Brick.	Gravel.	Concrete.	Unpaved.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1881.	3.51	0.03	.....	.....	50.92	.....	.....	.....	.....	116.85
1882.	13.41	0.03	.....	.....	48.28	.....	.....	.....	.....	116.85
1883.	26.90	0.03	.....	.....	54.37	.....	.....	.....	.....	135.57
1884.	33.76	0.25	.....	.....	52.32	.....	.....	.....	.....	163.10
1885.	39.84	0.25	.....	.....	50.17	.....	.....	.....	.....	166.24
1886.	48.99	0.36	.....	.....	47.36	.....	.....	.....	.....	168.89
1887.	64.11	0.36	0.07	.....	45.14	.....	.....	.....	.....	168.89
1888.	79.55	0.36	0.25	.....	42.76	.....	.....	.....	.....	172.79
1889.	92.39	0.36	3.36	.....	38.65	.....	.....	.....	.....	197.43
1890.	109.57	0.36	5.08	.....	36.63	.....	.....	.....	.....	242.19
1891.	116.83	0.59	6.66	0.49	36.39	.....	.....	.....	.....	242.19
1892.	116.86	0.65	10.49	0.49	36.98	.....	.....	.....	.....	250.40
1893.	112.19	0.79	11.28	0.49	34.98	.....	.....	.....	.....	252.71
1894.	111.16	0.81	13.70	0.49	39.95	.....	.....	.....	.....	253.35
1895.	109.78	0.81	14.38	0.49	39.15	.....	.....	.....	.....	253.48
1896.	108.70	0.81	14.61	0.53	39.71	.....	0.38	.....	.....	256.40
1897.	101.36	0.81	15.97	0.53	40.50	.....	1.32	.....	.....	257.40
1898.	91.99	0.65	18.30	0.61	41.91	.....	3.58	3.22	.....	258.30
1899.	81.77	0.65	24.33	0.67	45.03	.....	5.91	4.56	.....	257.93
1900.	79.49	0.68	30.81	0.67	46.69	0.21	8.77	5.03	.....	259.03
1901.	61.48	0.81	34.92	0.67	48.36	0.26	10.77	5.34	.....	259.12
1902.	48.57	0.81	39.75	0.25	50.02	1.12	11.53	5.54	.....	259.60
1903.	43.25	1.15	46.44	0.26	50.11	3.26	12.51	5.39	.....	260.14
1904.	*54.33	1.11	52.10	0.26	*54.56	4.20	14.24	5.87	0.14	265.40
						1.52	15.54	5.83	0.20	265.45

*Including cedar block and macadam with paved track allowance respectively.

TABLE No. 4.

SHOWING PERCENTAGE OF DIFFERENT CLASSES OF PAVEMENTS AND ROADWAYS.

*Cedar Block.....	20.46 per cent.
Stone and scoria.....	0.41 "
Asphalt.....	19.63 "
Wood on concrete.....	0.10 "
*Macadam.....	20.55 "
Brick.....	5.86 "
Gravel.....	2.19 "
Tar macadam.....	1.58 "
Bitulithic.....	0.57 "
Concrete.....	0.08 "
Unpaved.....	28.57 "

* Including pavement with paved track allowance.

ASPHALT PAVEMENTS.

During the year 8 heavy asphalt pavements and 25 light asphalt pavements were constructed. The pavements laid aggregate 34,475 square yards of heavy asphalt and 53,455 square yards of light asphalt, and a total length of 6.336 miles, which is $51\frac{6}{10}$ per cent. of the total mileage of all classes of pavements and roadways constructed during the year. The total length of asphalt pavements in the City is now 52.10 miles, or 19.63 per cent. of the total length of paved and unpaved streets in the City.

1904 witnessed still another drop in the price of asphalt pavement, due mainly to the keen competition among the three rival companies who are now in the field. The maximum, minimum and average prices per square yard which obtained from 1901 to 1904 are here given for the purposes of comparison.

		Maximum.	Minimum.	Average.
1901	Heavy	\$2.70	\$2.30	\$2.54 $\frac{6}{10}$
"	Light.....	2.23	1.82	2.04 $\frac{1}{2}$
1902	Heavy	2.60	2.45	2.54
"	Light.....	2.15	1.66	2.01 $\frac{1}{4}$
1903	Heavy.....	2.50	2.14	2.21 $\frac{3}{5}$
"	Light.....	1.88	1.60	1.70
1904	Heavy.....	2.30	2.15	2.22 $\frac{6}{10}$
"	Light.....	1.83	1.53	1.65

The repairing of the asphalt pavements, upon which the terms of guarantee have expired, was let by tender, the prices for the year being 94c. and 84c. per square yard for the heavy and light surfaces

respectively, and \$5.50 per cubic yard for concrete foundation. There was expended during the year the sum of \$16,457.75 for asphalt repairs.

The use of stone curbing with asphalt pavement has been entirely discontinued. During the year only 48 lineal feet was set, and that was to replace damaged portions of the old stone curbing; 33,425 lineal feet of combined concrete curb and gutter and 20,012 lineal feet of concrete gutter only was constructed during the year.

Experience shows that this form of curb and gutter is worthy of almost exclusive adoption.

The quantities, prices and other details connected with the asphalt pavements constructed during the year are tabulated in Tables No. 7 and No. 8. The physical and chemical details of the asphalt mixture used in paving during the year are also tabulated separately.

Table No. 5 is a list of the streets paved with asphalt on which the contractors' terms of guarantee have expired.

TABLE No. 5.
SHOWING STREETS PAVED WITH ASPHALT UPON WHICH THE CONTRACTORS'
GUARANTEES HAVE EXPIRED.

Street.	From.	To.	Length Feet.	Date of Expiry of Guarantee.
Jarvis	Queen	Bloor	6,734	Oct. 1, 1894
Wellington	Church	Yonge	900	June 28, 1894
Sherbourne	Queen	Bloor	6,786	June 1, 1895
Simcoe	King	Queen	1,182	Aug. 1, 1895
Ontario	Carlton	Howard	2,824	July 28, 1895
Sherbourne	King	Queen	1,160	July 2, 1895
Bloor	Yonge	Sherbourne	2,661	Nov. 18, 1895
Scott	Front	Colborne	374	Nov. 7, 1895
Wellington	Bay	York	848	July 18, 1896
Gerrard	Jarvis	Sherbourne	934	July 14, 1896
Melinda	Yonge	Bay	587	Aug. 5, 1896
Jordan	Wellington	King	379	Aug. 5, 1896
Sherbourne	The Bridge	South Drive	1,076	Nov. 11, 1896
Bay	King	Queen	1,175	Aug. 15, 1896
St. George	College	Bloor	3,286	Sept. 25, 1896
Toronto	N. line stone pvt.	Adelaide	349	May 1, 1897
Adelaide	York	Spadina	3,001	July 21, 1897
Victoria	King	Adelaide	414	Sept. 1, 1897
Rose	Howard	Winchester	2,134	Sept. 1, 1897
Yonge	King	Hayter	4,000	Nov. 9, 1897
St. James	Ontario	Parliament	595	Sept. 7, 1897
Yonge	Hayter	Grenville	944	Nov. 14, 1897
Devonshire Pl.	Hoskin	Bloor	1,228	Sept. 30, 1897
Yonge	Grenville	Bloor	3,099	Nov. 25, 1897
Richmond	Victoria	Bay	852	June 27, 1898
Earl	Sherbourne	West terminus	634	July 13, 1898
Winchester	Parliament	Sumach	1,512	Aug. 24, 1898
Munn's Lane	Wellington	218 ft. north	218	Aug. 23, 1898
Czar	Yonge	North	666	Sept. 25, 1898
Lane around Inland Revenue Office	nd Revenue Office		265	Oct. 5, 1898
Linden	Sherbourne	Huntley	585	Oct. 21, 1898
Hoskin	St. George	Queen's Pk. Cr.	1,130	June 27, 1899
Carlton	Jarvis	Sherbourne	937	June 7, 1899
Queen	Yonge	River	6,084	July 14, 1899
Bleecker	Carlton	Wellesley	1,412	July 5, 1899
Wellesley	Sherbourne	Parliament	1,227	Sept. 25, 1899
Cecil	Spadina	Beverley	1,052	Sept. 27, 1899
Adelaide	Yonge	Church	903	Nov. 8, 1899
King	Simcoe	Sherbourne	4,999	June 15, 1899
Leader Lane	King	Colborne	197	May 25, 1900
Avenue Rd. (trk's)	Bloor	Davenport	2,289	May 21, 1900
Avenue Rd.	Bloor	Davenport	2,289	Aug. 29, 1900
St. Patrick	McCaul	Beverley	606	Sept. 9, 1900
Victoria	Adelaide	Queen	694	Sept. 28, 1900
Lane 1st W. of } Yonge }	Adelaide	Temperance	177 }	May 28, 1901
Also lane running Leader Lane	E. and W. from a Wellington	bove lane Colborne	303 } 193 }	May 25, 1901

BRICK PAVEMENTS.

The status of Brick Pavements remains practically the same as that of 1903. The same difficulty was experienced in the matter of obtaining suitable brick in sufficient quantities to supply the demand as obtained during the previous year, and a strike of some three weeks' duration interfered to some extent with this particular work of the Department. This difficulty of obtaining a good quality of domestic brick is a serious one and threatens to compel the Department to abandon the use entirely of the home manufactured vitrified bricks in favor of a foreign paving block whose life is much longer and which can be laid at very little greater cost than can the inferior vitrified bricks.

In 1904 Brick Pavement on streets aggregate 1.402 miles as compared with 1.466 miles constructed in 1903, and the construction and reconstruction of track allowance aggregated 1.474 miles as compared with 1.136 miles. Compared as to area, 27,946 square yards of Brick Pavement of all kinds were constructed in 1904 and 30,285 square yards in 1903.

The track allowance construction shows .522 miles of new brick track allowance constructed during the year, .952 miles of brick reconstruction, .613 miles of scoria block reconstruction and .398 miles of concrete reconstruction or a total of 2.485 miles of all kinds as compared with 1.357 miles constructed in 1903. It is proposed to make a change in the track allowance construction cross-section to the extent of increasing the depth of concrete under the rails from 8 inches to 12 inches. This, altogether with the use of a 90-pound new design grooved girder rail with welded joints, used with a line of granite seats or paving blocks laid as a stringer on each side of the rail, and the entire abolition of the Tee-rail, will, it is hoped make a very satisfactory roadbed.

In constructing brick pavements during the year 8,727 lineal feet of stone curb and 2,398 lineal feet of concrete curb was placed.

The quantities, prices and other details of the brick pavement constructed during the year are shown in Tables No. 7 and No. 8.

CEDAR BLOCK PAVEMENTS.

The decline in the use of Cedar Block Pavements during the last five years is shown very clearly when compared year by year.

In 1900, 7.842 miles of cedar block pavement were laid; in 1901, 2.725; in 1902, 2.191 miles, in 1903, 1.774 miles, in 1904, 0.511 miles. During 1904 only three separate works were undertaken, one of which was a previously unimproved blind street 312 feet long. On the other two streets the old cedar block pavement was renewed with a surface of new cedar blocks, in one case, on a gravel foundation and in the other case on a concrete foundation. This decline in the use of cedar block pavement is the more gratifying, as latterly, the cedar obtainable is of so poor a quality as to make but a temporary pavement at best, and it is found that such a pavement needs renewal actually before the final assessment has been paid on the old one.

In connection with cedar block paving 5,784 lineal feet of wood curbing was placed. Tables No. 7 and No. 8 show in detail the quantities and cost of the cedar block pavements laid during the year.

Table No. 6 shows the sections of streets on which the final assessment for pavements has been paid or will be paid during the ensuing year. Many of these pavements are beyond repair.

TABLE No. 6.

LIST, SHOWING DATE OF FINAL ASSESSMENT ON DIFFERENT CLASSES OF PAYEMENTS.

Street.	From	To	Class of Pavement.	Date When Laid.	Date Final Assessment Paid.
Adelaide	York	Spadina	Asphalt ..	1892	1900
Adelaide	Bay	York	Cedar bl'ck	1899	1904
Adelaide	Yonge	Church	Asphalt ..	1894	1904
Afton Ave.	Lisgar	Northcote ..	Gravel ...	1898	1901
Argyle	Dundas	Gladstone ..	Cedar bl'ck	1895	1900
Arthur	Bathurst	Euclid	"	1898	1903
Barton Ave.	Manning	Euclid	"	1890	1900
Barton Ave.	Palmerston ..	Euclid	"	1892	1897
Barton Ave.	Brunswick	Howland	"	1892	1898
Bathurst	S. s. of Bridge.	North Rly. Gate.	"	1886	1897
Bathurst	Front	Niagara	"	1898	1903
Bay	King	Queen	Asphalt ..	1891	1899
Bay	Front	Esplanade ..	Cedar bl'ck	1899	1904
Beaconsfield Av.	Queen	Afton	Gravel	1898	1901
Beaconsfield Av.	Afton	Dundas	"	1898	1901
Beatty Ave.	King	Queen	Cedar bl'ck	1899	1904
Beverley	Queen	College	Macadam ..	1896	1901
Birch Ave.	Yonge	West term.	Cedar bl'ck	1890	1900
Bismarck Ave. ..	Yonge	Park Rd.	Macadam ..	1891	1897
Bismarck Ave. ..	Park Rd.	East end	Cedar bl'ck	1891	1897
Bleecker	Wellesley	Howard	Cedar bl'ck	1893	1898
Bleecker	Carlton	Wellesley	Asphalt ..	1894	1902
Blevins	Sumach	East end	Cedar bl'ck	1896	1897
Bloor	Yonge	Avenue Rd.	Macadam ..	1889	1895
Bloor	Yonge	Sherbourne	Asphalt ..	1890	1900
Bloor	Bathurst	Clinton	Cedar bl'ck	1889	1901
Bloor	Shaw	Dufferin	"	1890	1901
Bloor	Clinton	Shaw	"	1891	1901
Bloor	Dufferin	Lausdowne	"	1894	1901
Bolton Ave.	Queen	Gerrard	"	1898	1903
Booth Ave.	Queen	Eastern	"	1891	1896
Brighton Ave. ..	Pape	East end	"	1890	1899
Broadview Ave. ..	Withrow Ave ..	Danforth Ave. ..	"	1890	1898
Broadview Ave. ..	Queen	Gerrard	"	1887	1897
Broadview Ave. ..	Gerrard	Withrow Ave ..	"	1887	1897
Broadview Ave. ..	Queen	Eastern	"	1891	1896
Broadway Pl. ...	Spadina	159 ft. 3 in. west..	"	1899	1904
Brock Ave.	Railway tracks.	Dundas	Gravel	1898	1901
Brock Ave.	Logan	Howland	Cedar bl'ck	1888	1898
Bruce	Shaw	Givens	"	1892	1897
Casimir	St. Patrick	North to a lane..	"	1889	1898
Carlaw Ave.	Queen	Eastern	"	1889	1899
Carlaw Ave.	Eastern	Bay	"	1885	1897
Carlton	Sackville	Sumach	Macadam ..	1898	1903
Carlton	Jarvis	Sherbourne	Asphalt ..	1894	1904

Street.	From	To	Class of Pavement.	Date When Laid.	Date Final Assessment Paid.
Carlyle	St. Patrick....	376 ft. north	Cedar bl'ck	1899	1904
Caroline	Queen	Eastern	"	1889	1899
Carr	Esther	End of Carr	"	1894	1899
Cecil	Spadina	Beverley	Asphalt ..	1894	1904
Charles	Church	Jarvis	Cedar bl'ck	1897	1902
Christie	Bloor	Melville	"	1891	1898
Churchill	Term. of pavt..	136 ft. east	"	1893	1898
Clara	Oak	Oxford	"	1886	1896
Clarence Sq.	North, east and	south sides	"	1898	1903
Classic Pl.	Huron	East end	Macadam ..	1897	1902
Clifford	Stafford	Strachan	Cedar bl'ck	1887	1897
Clinton	Mansfield	College	"	1899	1904
Cluny Ave.	Roxborough ..	Crescent Rd.	"	1891	1897
Colborne	Church	West Market	"	1898	1903
Collahie	Gladstone	Beaconsfield	Gravel	1899	1902
Cottingham	1350' w. of Yonge	Avenue Rd.	Cedar bl'ck	1886	1896
Cottingham	Rathmally	Poplar Plains Rd.	"	1889	1899
Crescent Rd.	Yonge	Rosedale Rd.	Macadam ..	1899	1904
Crocker	Bellwoods	Claremont	Cedar bl'ck	1890	1900
Czar	Yonge	North	Asphalt ..	1893	1901
D'Arcy	McCaul	Spadina	Cedar bl'ck	1895	1900
Darling	North term.	End of sewer	"	1891	1896
Davenport Rd.	Yonge	Hazleton	Macadam ..	1898	1903
Davies Ave.	Queen	Matilda	Cedar bl'ck	1894	1899
Defoe	Tecumseth	Niagara	"	1890	1900
Delaware Ave.	College	Bloor	"	1892	1897
Delaware Ave.	Bloor	Van Horne	"	1891	1897
Devonshire Pl.	Hoskin	Bloor	Asphalt ..	1892	1902
Dewson	Ossington	Dovercourt	Cedar bl'ck	1890	1900
Division	Spadina	Huron	Macadam ..	1899	1904
Dovercourt Rd.	Bloor	Van Horne	Cedar bl'ck	1891	1901
Dovercourt Rd.	Queen	Dundas	Gravel	1898	1901
Dufferin	Peel	Dundas	"	1898	1901
Dufferin	King	G.T.R.	Cedar bl'ck	1889	1898
Dufferin	Bloor	Union	"	1891	1901
Dufferin	Dundas	Lindsey	Macadam ..	1899	1904
Dunn Ave.	Queen	Lake	Gravel	1898	1901
Dunbar Rd.	Elm	South Drive	Cedar bl'ck	1890	1900
Dundas	Sorauren	Bloor	"	1893	1898
Dupont	Bathurst	Manning	"	1892	1897
Earl	Sherbourne ..	West term.	Asphalt ..	1893	1898
Elgin Ave.	Avenue Rd.	Bedford Rd.	Macadam ..	1899	1904
Elliott	Broadview	Bolton	Cedar bl'ck	1898	1903
Elm Grove	King	Queen	Gravel	1898	1901
Elm	Yonge	University	Macadam ..	1899	1902
Empress Cr.	Dowling	Jameson	Cedar bl'ck	Parkdale 1897	1897
Empress Cr.	Dunn	Jameson	Cedar bl'ck	1893	1898
Euclid Ave.	Arthur	College	"	1897	1902
Euclid Ave.	Bloor	Follis	"	1890	1898
Euclid Ave.	Arthur	Robinson	"	1899	1904
Euclid Pl.	Euclid Ave.	East terminus	"	1893	1899

Street.	From	To	Class of Pavement.	Date When Laid.	Date Final Assess'm't Paid.
Evans Ave.....	Clinton	West terminus ..	Cedar bl'ck	1892	1898
Fenning	Queen	Humbert	Brick	1897	1903
First Ave.....	Broadview	Logan	Macadam ..	1899	1904
Florence.	Dufferin	Brock	Cedar bl'ck	1899	1904
Frankish	Brock	Sheridan	"	1890	1899
Frizzell	Carlaw	Pape	"	1891	1900
Front	Sherbourne	Trinity	Macadam ..	1899	1902
Front	George	Sherbourne	"	1899	1902
Foxley	Dundas	Dovercourt	Gravel ...	1898	1901
Gerrard	Broadview	Howland	Cedar bl'ck	1888	1897
Gerrard	Jarvis	Sherbourne	Asphalt ..	1891	1901
Gerrard	Yonge	Jarvis	Macadam ..	1899	1904
Gildersleeve ..	Sumach	East end	Cedar bl'ck	1894	1899
Givens	Queen	Argyle	Macadam ..	1898	1903
Gladstone	Queen	Dundas	Cedar bl'ck	1897	1902
Gordon	Sheridan	Dufferin	"	1891	1896
Grace	Arthur	College	"	1891	1902
Grafton Ave....	Roncesvalles ..	Triller	"	1891	1899
Grand Opera House Lane	Adelaide	149 ft. south ..	Concrete ..	1896	1902
Grange Rd.	Beverley	McCaul	Macadam ..	1900	1903
Grange Ave....	Spadina	Esther	Brick	1897	1903
Grenville	Yonge	Surrey Pl.	Macadam ..	1899	1904
Grant	Kintyre	North terminus ..	Cedar bl'ck	1890	1900
Grosvenor	Yonge	Queen's Park ..	Gravel	1900	1903
Gwynne Ave....	King	Queen	Cedar bl'ck	1898	1903
Halton	Shaw	Dundas	"	1892	1897
Hamburg Ave..	Bloor	Union	"	1891	1899
Hamilton	Paul	Elliott	"	1890	1899
Hamilton	Queen	Paul	"	1891	1896
Harbord	Huron	Bathurst	"	1897	1902
Harbord	St. George	Huron	Macadam ..	1898	1903
Henderson	Clinton	Grace	Cedar bl'ck	1891	1898
Herrick	Bathurst	Lippincott	"	1892	1897
Heward Ave....	Queen	Eastern Ave.	"	1889	1899
High Park Ave.	Roncesvalles ..	High Park	"	1893	1899
Hoskin Av....	St. George ...	Queen's Park Cres. Drive.	Asphalt ..	1894	1904
Howard Park A.	Dundas	Roncesvalles	Cedar bl'ck	1891	1901
Howie	Clark	North end	"	1889	1899
Humbert	Dovercourt	Dundas	"	1898	1903
Huntley	Bridge	Elm	"	1890	1900
Huron	Phoebe	Grange	"	1893	1898
Isabella	Sherbourne ..	Jarvis	Macadam ..	1898	1901
Jarvis	King	Queen	"	1896	1899
Jarvis	Queen	Bloor	Asphalt ..	1889	1899
John	King	Queen	Cedar bl'ck	1890	1900
John	King	Front	Macadam ..	1895	1899

Street.	From	To	Class of Pavement.	Date When Laid.	Date Final Assessment Paid.
John	Bridge	Lake	Macadam..	1898	1903
Johnston's Lane	Adelaide.....	South end	Brick	1897	1903
Jordan	Wellington....	King	Asphalt ..	1891	1899
King	234 ft. w. of Jefferson.	1900 ft. east	Tamarac ..	1891	1899
King	Simcoe	Sherbourne	Asphalt ..	1893	1903
Lane be'tw'n St. Patrick and D'Arcy.	Huron.	Beverley.....	Cedar bl'ck	1892	1897
Lane s. of Pearl.	Near Simcoe ..		Cobble....	1892	1897
Lane east of Spadina.	Grange	St. Patrick	"	1892	1897
Lane s. of Pearl.	Simcoe	York	"	1892	1897
Lane bet. Yonge and Victoria.	Gould	Wilton.....	"	1887	1897
Lane bet. Yonge and Victoria.	Adelaide.....	106 ft. south	"	1892	1897
Lane bet. York and Simcoe.	North of Pearl	Near Adelaide .	Cedar bl'ck	1888	1898.
Lane 1st n. of Queen.	Mutual	Jarvis	"	1888	1898
Lane n. of Wil- ton Cres.	Pembroke	George	"	1888	1898
Lane bet. Queen and Richmond	Church	East terminus ..	Cobble ...	1888	1898
Lane s. of Queen	Tecumseth	Niagara	"	1893	1898
Lane rear of John.	Adelaide	Lane n. of Arling- ton Hotel.	Cedar bl'ck	1892	1898
Lane e. of Bay..	Wellington....	214 ft. south	"	1888	1899
Lane 1st e. of Bay.	Wellington....	Melinda	Concrete ..	1895	1900
Lane n. of Foxley	Foxley	135 ft. north	Cedar bl'ck	1889	1899
Lane 1st s. of Queen.	Simcoe	Duncan	"	1889	1899
Lane bet. Borden and Lippincott	Ulster	Bloor	"	1891	1896
Lane rear Stand- ard Bank.			Scoria ...	1892	1902
Lane rear Inland Revenue Office			Asphalt ..	1893	1901
Lansdowne	Queen	Union	Gravel....	1898	1901
Lansdowne ..	Dundas	Bloor	Cedar bl'ck	1889	1899
Leslie	Queen	Ashbridge's Bay .	"	1891	1901
Linden	Sherbourne ..	Huntley	Asphalt ..	1893	1901
Lisgar	Queen	Afton	Gravel....	1897	1900
Lisgar	Dundas	Afton	"	1898	1901
Lobb	Shaw	Crawford	Cedar bl'ck	1890	1900
Logan Av	Queen	Ashbridge's Bay .	"	1889	1898
Logan Av.....	Gerrard	Danforth.....	"	1889	1899
Lorne.....	Front	Esplanade	"	1899	1904
Lucas.....	Sorauren.....	Roncesvalles	"	1892	1897

Street.	From.	To	Class of Pavement.	Date When Laid.	Date Final Assessment Paid.
McAlpine	Davenport	McMurrich	Cedar bl'ck	1891	1897
McCaul	Queen	College	"	1898	1903
McDonnell	Queen	2826 ft. north	Gravel	1898	1901
McDonnell Sq	Bathurst	Defoe	Macadam	1900	1903
McMaster Av.	Avenue Rd.	Rathnally	Cedar bl'ck	1890	1900
McPherson Av.	Rathnally	Poplar Plains Rd.	"	1890	1901
McPherson Av.	Yonge	1330 ft. west	Macadam	1899	1904
Manning Ave.	Robinson	Queen	Cedar bl'ck	1889	1898
Manning Ave.	Bloor	Hammond Pl.	"	1890	1900
Mansfield Ave.	Manning	Clinton	"	1893	1898
Mansfield Ave.	Bellwoods	Grace	"	1893	1899
Maple Grove	O'Hara	Brook	"	1899	1904
Marion	Lansdowne	McDonnell	"	1891	1899
Markham	Herrick	Bloor	"	1889	1898
Massey	King	Queen	"	1891	1897
Maul	Adelaide	Farley	"	1887	1897
Melbourne Ave.	Cowan	Dufferin	Gravel	1897	1900
Melinda	Yonge	Bay	Asphalt	1891	1899
Millstone Lane.	York	East end	Cedar bl'ck	1889	1899
Minnis Lane.	Wellington	218 ft. north	Asphalt	1893	1901
Murray	Caer Howell	North end	Cedar bl'ck	1898	1903
Napier	Munro	Lane	"	1891	1896
Nassau	Lippincott	Bathurst	"	1899	1904
New	Davenport Rd.	West end	"	1889	1899
North	St. Mary	Bloor	Macadam	1900	1903
Northcote	Queen	Afton	Cedar bl'ck	1895	1900
Northumberland	Ossington	Preston	"	1893	1898
O'Hara	1605 ft. n. Queen	Railway tracks	"	1892	1897
O'Hara	Queen	1,455 ft. north	Gravel	1898	1901
Olive	Bathurst	Palmerston	Cedar bl'ck	1893	1898
Ontario Pl.	Ontario	270 ft west	"	1886	1896
Ontario	Carlton	Howard	Asphalt	1890	1900
Osler	Royce	C. P. R. tracks	Cedar bl'ck	1892	1898
Ossington	Bloor	C. P. R. tracks	"	1892	1897
Ossington	Harrison	College	"	1888	1899
Oxford	Augusta	Spadina	"	1895	1900
Oxford	Augusta	Lippincott	"	1899	1904
Palmerston Ave.	Bloor	Dupont	"	1890	1899
Pape Ave.	Queen	Danforth	"	1887	1897
Parliament	Wellesley	Howard	"	1888	1895
Parliament	Queen	Gerrard	Macadam	1899	1904
Peel	Gladstone	Dufferin	Gravel	1898	1901
Pembroke	Shuter	Wilton	Macadam	1899	1902
Perth Ave.	Bloor	Royce	Cedar bl'ck	1893	1898
Peter	Front	Wellington	"	1886	1897
Peter	King	Queen	"	1890	1900
Pinehill Rd.	Rosedale Rd.	West end	Macadam	1894	1899
Poulett	Sydenham	South terminus	Cedar bl'ck	1890	1896
Prospect	Rose	Ontario	"	1889	1899

Street.	From	To	Class of Pavement.	Date When Laid.	Date Final Assessment Paid.
Queen	Gwynne ...	Roncesvalles	Cedar bl'ck	1898	1903
Queen	Gladstone.....	Niagara	"	1898	1903
Queen	Yonge	River	Asphalt...	1894	1904
Queen's Park Drive.	Queen's Park Cres.	Bloor	Macadam .	1898	1903
Queen's Park Cres. Drive, e.s.	University Cres.	Road running n. from Park,	"	1897	1900
Reufrew Pl.	McCaul	East end	Cedar bl'ck	1889	1899
Richmond Pl.	Richmond	South end	"	1886	1896
Richmond	Victoria	Bay	Asphalt...	1893	1901
Richmond	Bay	York	Macadam .	1897	1900
Robinson	Palmerston....	Euclid	Cedar bl'ck	1886	1896
Rolyat	Dundas	Grove	"	1899	1904
Roncesvalles .	Queen	Dundas.....	"	1890	1900
Rose Ave.	Howard	Winchester	Asphalt...	1892	1900
Roseberry Ave..	Bathurst	East end	Cedar bl'ck	1894	1899
Rossin House Lane.	York	East end	Cobble....	1891	1897
Roxborough Av.	Yonge	1,328 ft. west...	Cedar bl'ck	1892	1897
Roxborough Av.	Yonge	2,180 feet east...	"	1891	1900
Royce Av.	Symington Ave.	C. P. R.	"	1893	1898
Rush Lane	Esther	Portland	"	1890	1900
Rusholme Rd.	Hepbourne....	Bloor	"	1890	1900
Russell.....	St. George	Spadina.....	"	1899	1904
St. Albans.....	Surrey	Queen's Park ...	Macadam .	1898	1903
St. Clarens Ave.	Wyndham	Dundas	Cedar bl'ck	1889	1898
St. Clarens Ave.	Dundas	College	"	1890	1900
St. George	College	Bloor	Asphalt...	1891	1901
St. James Ave..	Ontario	Parliament.....	"	1892	1899
St. Patrick.....	Bathurst	Denison	Cedar bl'ck	1898	1903
Sackville.....	Gerrard	Carlton	"	1899	1904
Sackville.....	Wellesley	256 ft. north ...	Macadam .	1899	1904
Sackville.....	Wellesley	Winchester	"	1899	1904
Salisbury Ave.	Sackville.....	East terminus ...	Cedar bl'ck	1886	1897
Scollard.....	Yonge	Hazelton.....	C. B. and Brick in Tracks.	1898	1903
Scott	Front	Colborne	Asphalt...	1890	1900
Shaw	College	Bloor	Cedar bl'ck	1893	1898
Shaw	Queen	Defoe	"	1891	1901
Shaw	Queen	Arthur	"	1898	1903
Shaftesbury Ave.	Yonge	1,100 ft. east ...	"	1890	1899
Sheppard.....	Adelaide	Richmond	Macadam .	1895	1899
Sherbourne.....	Bridge	South Drive	Asphalt...	1891	1901
Sherbourne.....	King	Queen	"	1890	1899
Sherbourne.....	Queen	Bloor	"	1889	1899
Shirley	Brock	St. Clarens.....	Cedar bl'ck	1891	1898
Shuter	Yonge	Sherbourne	Macadam .	1901	1904
Simcoe.....	Front	Station	Cedar bl'ck	1896	1901
Simcoe.....	King	Queen	Asphalt...	1890	1900
South Drive....	Crescent Rd.	Scarth Rd.	Macadam .	1893	1898

Street.	From	To	Class of Pavement.	Date When Laid.	Date Final Assessment Paid.
South Drive	e.s. South Drive, running s.	Glen Rd.....	Macadam ..	1899	1904
Spadina Ave....	Queen	Adelaide	Cedar bl'ck	1899	1904
Spadina Rd....	Bernard	C.P.R.	Cedar bl'ck	1891	1901
Spruce	River	Sumach	Macadam ..	1899	1904
Sully Cres.	Shaw	Shaw	Cedar bl'ck	1899	1904
Sumach	King	Eastern	"	1890	1899
Sumach	Gerrard	Wellesley	Macadam ..	1899	1904
Sword	Gerrard	Spruce	"	1899	1904
Temperance....	Yonge	Bay	"	1896	1899
Terauley	Queen	Albert	"	1898	1903
Thompson	Davies	Munro	Cedar bl'ck	1890	1900
Toronto	N. King	Adelaide	Asphalt ..	1892	1897
Tyndall Ave.	King	Springhurst	Macadam ..	1898	1900
Ulster	Bathurst	Markham	Cedar bl'ck	1894	1899
Vanauley	Queen	Grange	"	1886	1897
Vanauley	St. Patrick	St. Andrew	"	1887	1897
Victor Ave.	Logan	Broadview	Macadam ..	1899	1904
Victoria Lane ..	Queen	Shuter	Cobble ..	1890	1899
Virtue	Serauren	East term.	Cedar bl'ck	1890	1900
Victoria	King	Adelaide	Asphalt ..	1892	1900
Vermont	Palmerston	Manning	Cedar bl'ck	1891	1896
Walmer Rd....	Bloor	Lowther	"	1897	1902
Walmer Rd....	Lowther	Castle	"	1898	1903
Wascana	Sumach	186 ft. east	"	1891	1896
Washington	Spadina	Huron	Macadam ..	1899	1904
Wellesley Crest.	Sherbourne	Jarvis	"	1898	1901
Wellesley	Sumach	300 ft. east	Cedar bl'ck	1889	1899
Wellesley	Parliament	Sumach	Macadam ..	1899	1904
Wellesley	Sherbourne	Parliament	Asphalt ..	1894	1904
Wellington Ave.	Bathurst	East term.	Cedar bl'ck	1891	1901
Wellington	Church	Yonge	Asphalt ..	1889	1899
Wellington	Bay	York	"	1891	1899
West Lodge ..	Merrion	Pt. 1,146 ft. north	Cedar bl'ck	1899	1904
Westmoreland Ave.	Durham	Union	"	1890	1900
Westmoreland Ave.	Bloor	Durham	"	1890	1900
Wilkens	King	North term.	"	1888	1899
Winchester	Parliament	Sumach	Asphalt ..	1893	1901
Withrow Ave..	Broadview	1,060 ft. east	Cedar bl'ck	1889	1898
Woolfrey	Broadview	Bowden	"	1888	1899
Wright Ave....	McDonnell	Serauren	"	1891	1899
Yonge	Grenville	Bloor	Asphalt ..	1892	1902
Yonge	King	Hayter	"	1892	1902
Yonge	Hayter	Grenville	"	1892	1902
Yorkville	Yonge	Avenue Rd.	Cedar bl'ck	1896	1901



H U M B E R B A Y

WARD 6

WARD 5

WARD 4

WARD 3

HOWARD PARK

VICTORIA PARK

TRINITY COLLEGE

PROVINCIAL LUNATIC ASYLUM

CENTRAL PRISON

INDUSTRIAL GROUPS

NEW PARK

ST. JOHN'S CHURCH

ST. MARY'S CHURCH

ST. MICHAEL'S CHURCH

ST. PETER'S CHURCH

ST. PAUL'S CHURCH

ST. ROSE'S CHURCH

ST. THOMAS'S CHURCH

ST. VINCENT'S CHURCH

ST. WALTER'S CHURCH

ST. WILFRED'S CHURCH

ST. WYLLIE'S CHURCH

ST. YVES'S CHURCH

ST. ZEPHYRUS'S CHURCH

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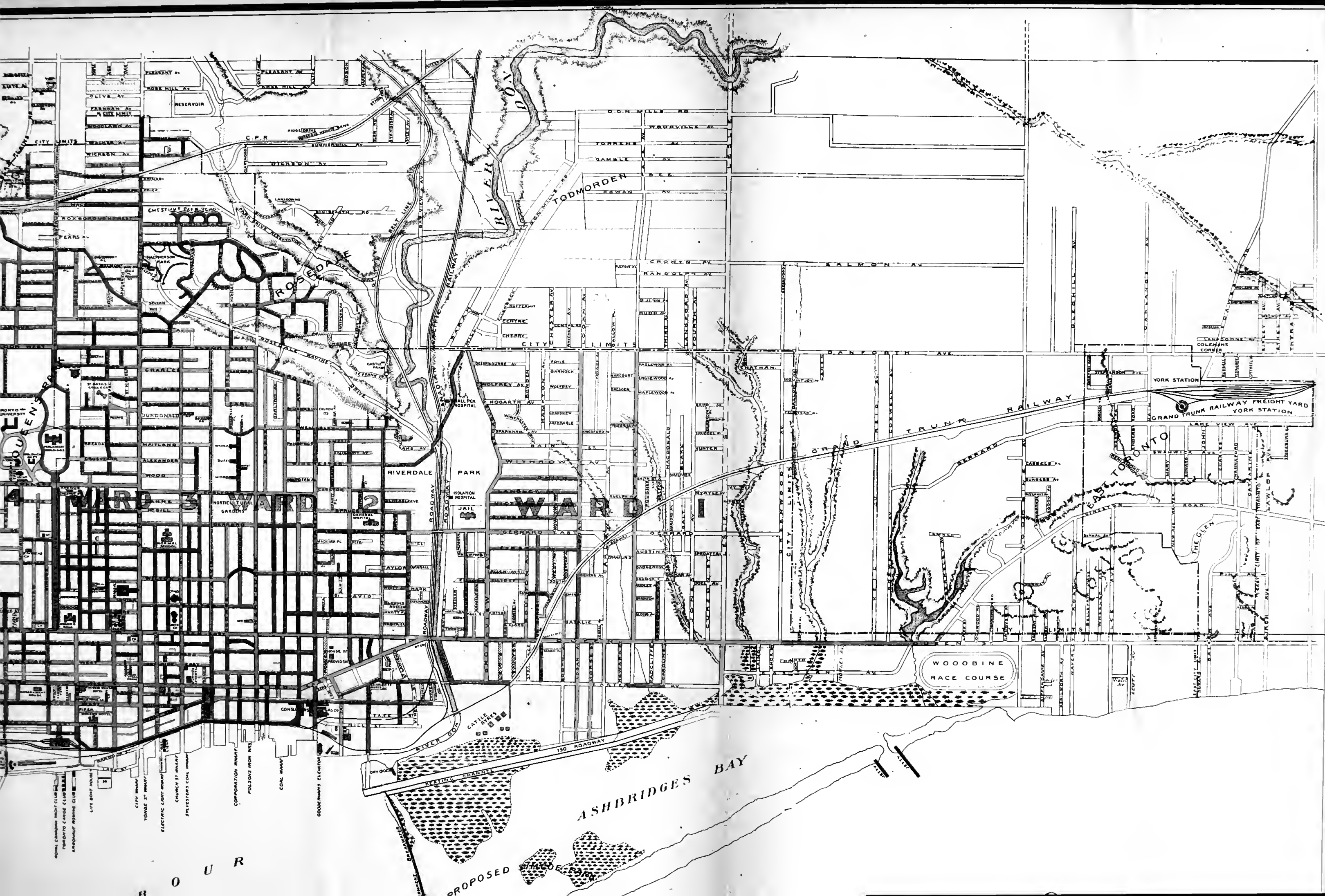
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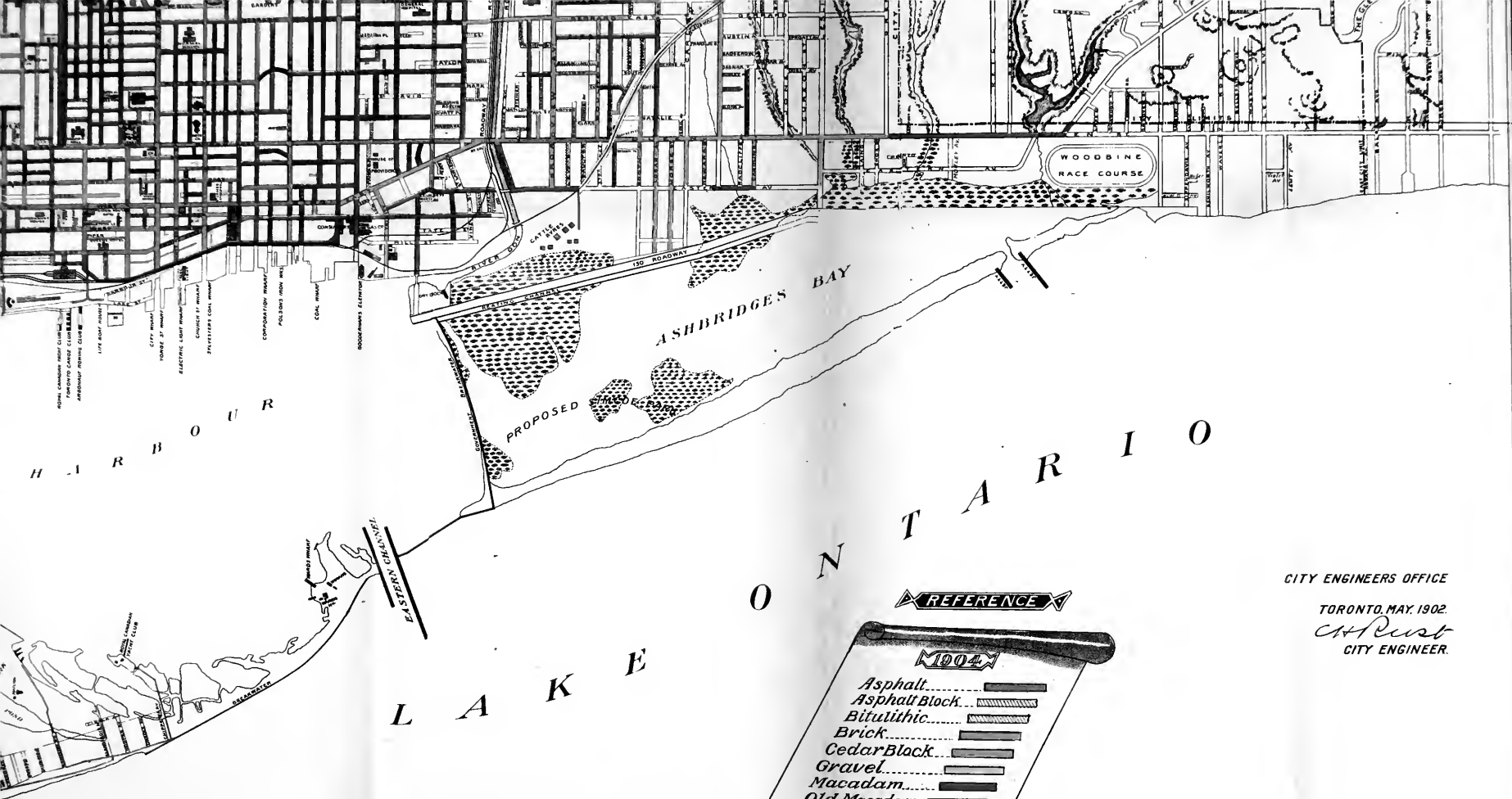
PROPOSED BRIDGE

H U M B E R
B A Y

PLAN
OF THE
CITY OF TORONTO



H A R B O R



REFERENCE

1004

Asphalt.....	
Asphalt Block.....	
Bitulithic.....	
Brick.....	
Cedar Block.....	
Gravel.....	
Macadam.....	
Old Macadam.....	
Tar Macadam.....	
Stone and Scoria.....	
Unpaved.....	

CITY ENGINEERS OFFICE

TORONTO, MAY, 1902.

Chas. Rust
CITY ENGINEER.

TAR MACADAM ROADWAYS.

One tar macadam roadway was constructed in 1900, 1 in 1901, 6 in 1902, 11 in 1903 and 8 in 1904. This statement indicates the rapid rise and threatened fall of tar macadam roadways in the opinion of Toronto's ratepayers. That there was ample cause for alarm is fully borne out by the behavior of many of the tar macadam pavements already constructed. Streets on which the greatest care was taken both as to selection of material as well as to methods of their heating, and the mixing showed signs of disintegration of the surface before the pavement had been down a month. Similar defects developed in the surface of pavements that had been laid during previous seasons, showing that it was not only isolated, accidental cases that the pavements failed, but that some inherent defect existed either in the methods of construction or, more likely, in the principles underlying those methods. Experiments were made to determine, if possible, wherein lay the weakness and a change is proposed which it is hoped will result in a pavement that will give entire satisfaction both as to cost and as to wearing qualities under conditions of medium traffic. Moreover, the period of maintenance guaranteed is extended from one year to three years and it is confidently expected that this can again be extended to five, when the result of the proposed change is seen.

It is proposed to increase the thickness of the foundation course from 4 inches to 5 inches, eliminate the intermediate course and make the wearing surface 3 inches in thickness instead of 1 inch as formerly. The wearing surface of a tar macadam is the crucial factor. The proposed aim is to select such sizes of stone for the wearing surface as will make the densest aggregate, that is, that contains the least percentage of voids. In the interests of simplicity it is decided to use only three sizes of broken stone, viz, $1\frac{1}{2}$ inch, $3\frac{1}{2}$ inch and screenings or crushed stone varying in size from dust to $\frac{1}{4}$ inch in greatest dimension. A mixture of these three sizes of stone in the proportion of two parts of $1\frac{1}{2}$ inch stone, one part of $\frac{1}{2}$ inch stone and one part of screenings is found by careful experiment to give an almost perfectly dense aggregate and is adopted as the specified proportions to be used. Actual tests have been made, using the above proportions of stone and varying mixtures of tar and pitch, under conditions which will exist on street work and the results give promise of a pavement in all respects satisfactory,

including the matter of cost. These samples may be seen at any time by those interested. It is proposed to continue the use of brick gutters and concrete curb in connection with tar macadam pavements.

The length of tar macadam pavement constructed during 1904 was 0.920 miles as compared with 2.148 miles in 1903. This marked falling of I attribute to the disappointing showing made by those pavements already constructed.

During the year 3,432 lineal feet of concrete curb, 4,236 lineal feet of stone curb and 867 lineal feet of wood curb was constructed in connection with tar macadam pavements. Tables No. 7 and No. 8 show details.

MACADAM.

During the year there was constructed a total mileage of 1.940 miles of macadam roadways. Although this is a decrease, when compared with 1903, of .797 miles macadam is still a popular form of roadway due chiefly to the cheapness of its construction. This really is its only recommendation, but, in suburban districts, where traffic is very light, it may be adopted with advantage. Brick gutters are used where the grade is so steep as to cause the water to wash away the surface of the macadam roadway.

In connection with macadam roadways 5,297 lineal feet of stone curb, 3,438 lineal feet of concrete curb and 10,786 lineal feet of wood curb was constructed. Tables No. 7 and No. 8 show details of macadam roadways.

CONCRETE PAVEMENTS.

One concrete pavement was constructed during 1904, that on Spadina Place with an area of 646 square yards. Under such conditions concrete pavement seems to be entirely satisfactory being durable, easily cleaned and, therefore, sanitary, and much cheaper than either brick or asphalt, and when laid with a view to prevent cracking and heaving should be as permanent as either. The concrete pavement on McCaul Street, track allowance, which has been started in 1903, was completed during 1904. The adoption of concrete in track allowance surface should not be encouraged, because, except in the most recently constructed tracks, easy access to the rail fastenings and tie rods at any time is essential to the keeping of the track in any kind of proper shape, and it is more

difficult to cut and repair a concrete surface than either a brick, scoria or granite sett pavement. And besides a concrete surface becomes dangerously slippery when subjected to the heavy traffic which naturally exists on any street that has street railway tracks.

In 1903 a mileage of 0.147 miles of concrete pavements was constructed, in 1904, 0.053 miles.

CEMENT CONCRETE WALKS.

With the exception of 1903 the mileage of concrete sidewalks constructed in 1904 is greater than in any previous year by 3.65 miles, but falls short of 1903 by 3.93 miles. Notwithstanding this decrease in mileage as compared with 1903 there were undertaken and carried to completion in 1904 a greater number of works by 22 than 1903.

Only one brick walk was constructed, with a mileage of .001. The total length of permanent sidewalks constructed during 1904 was 31.059 miles and the total length in the City is now 149.669 miles.

The question of coloring the surface of concrete walks has been gone into experimentally, both in the laboratory and on street work. The result of the street test was decidedly disappointing. Lamp black was the only color used and it was found impossible to so thoroughly mix the coloring matter through the whole mass as to prevent streaking. The surface was so mottled that it was found necessary to remove the colored material and replace it with the usual wearing surface. The laboratory tests were more satisfactory, and, though made on a small scale, give some promise of feasibility in actual practice. The colors used were venetian red, magnetic oxide of iron and carbon black, and were mixed in varying proportion but neither one gave a pleasing color effect. I propose, however, next season to ask for permission to build a walk, using these colors in alternate bays, in order to settle definitely, if possible, the question of the elimination of the glare from the present gray-white surface of concrete walks.

In constructing concrete sidewalks a length of 67,942 lineal feet of concrete curb was built in place during the year.

DAY LABOR WORKS.

During the year 43 concrete walks were constructed by day labor, on 19 of which the City Engineer's tender was the lowest. On 9 other walks the City Engineer's tender was also the lowest but at the request of the next lowest tenderer, he was allowed to do the work, under the supervision of this Department, at the Engineer's figures. The balance of the 43 walks constructed by day labor, 24 in number, were ordered by Council to be done by day labor without the formality of calling for tenders. The walks constructed under this system aggregate 3.07 miles as compared with 4.847 miles constructed in 1903.

In estimating the gain or loss resulting from the day labor system, if we take the lowest local contractor's tender as a basis of comparison on the walks for which tenders were called, we find an actual gain of \$1,052.49, on an actual expenditure of \$3,950.53. If we estimate in the same ratio, the gain on those that were not awarded by tender we have a saving shown on the 43 walks constructed by day labor of \$2,526. To this should be added also, the cost of inspection which is always incurred on contract works.

Table No. 9 gives lengths, widths, amount of City's tender, the next lowest tender, the actual cost of the work and the loss or gain (in every case it is a gain for 1904), in comparison with contractors' tenders.

During the year we were awarded contracts by tender for the construction of 7 macadam roadways, 1 macadam roadway reconstruction, 1 concrete pavement, 5 brick on concrete pavements, 2 concrete curbs, 1 asphalt block (completed), and 1 grading. The total cost of these works, exclusive of interest on money, was \$27,279.30, which is an increase over the expenditure on pavements undertaken and carried out by day labor during 1903 of 73 per cent. In 1903 the total expenditure was \$15,765.33.

Table No. 10 gives detailed information and statistics of these works. It will be noticed that there is shown a saving in favor of the owners of property abutting on the streets on which the pavements were constructed of \$5,493.77 on a total expenditure of \$27,279.30, to which saving should be added the cost of inspection, which would have been incurred had these been done by a contractor.

LT MIXTURES.

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St.	Chemical Analysis.			Inorganic Dust Grading.					
	Asphaltene	Non-bituminous Organic matter	Inorganic matter.	On No. 10 Sieve.	On No. 50 Sieve.	Pass No. 50 Sieve.	Pass No. 80 Sieve.	Pass No. 100 Sieve.	Pass No. 200 Sieve.
Abbs St.	16.19	9.64	30.48	0.0	2.0	6.0	10.0	22.0	60.0
Adelaide	8.78	0.25	0.28	1.5	18.0	5.0	6.0	15.0	56.0
Bernard	8.81	3.56	35.21	0.0	24.0	12.0	4.0	12.0	48.0
Beatrice	7.48	6.04	33.42	0.0	.....	.....	.....	.....	.....
Baldwin	9.27	0.80	0.19	1.0	2.0	4.0	5.5	20.0	68.5
Brock A.	8.10	9.47	32.03	0.0	2.0	1.0	1.0	10.0	86.0
Bathurst	8.72	9.42	33.49	0.0	1.0	3.5	5.6	24.0	67.0
Bathurst	.....	.....	.....	1.0	20.0	4.0	6.0	22.0	48.0
Crawford	8.10	9.47	32.03	0.0	1.0	2.0	1.7	8.3	87.0
Callender	8.91	8.77	32.16	0.0	2.0	8.0	12.0	22.0	56.0
Dowling	9.94	10.58	33.45	0.0	10.0	20.0	8.0	18.0	44.0
Givens	.....	.....	.....	.....	2.0	2.0	2.0	14.0	80.0
Kendall	9.47	10.77	31.30	0.0	6.0	14.0	10.0	18.0	52.0
King St.	8.78	0.25	0.28	0.5	16.0	4.0	8.0	20.0	52.0
King St.	.....	.....	.....	0.5	20.0	10.0	10.0	18.0	42.0
Lansdown	.....	.....	.....	0.0	2.0	8.0	14.0	24.0	52.0
Mowat	1.74	2.33	0.18	1.5	18.0	14.0	6.0	14.0	48.0
Meredith	6.19	9.64	30.48	0.0	14.0	12.0	6.0	12.0	56.0
Macpherson	2.36	1.80	37.27	1.0	4.0	8.0	10.0	20.0	58.0
Markham	2.36	1.80	37.27	1.0	4.0	8.0	10.0	20.0	58.6
Niagara	4.99	2.92	35.27	0.0	4.0	4.0	4.0	14.0	74.0
Ottawa	4.99	2.92	35.27	0.0	14.0	12.0	10.0	20.0	44.0
Rathnal	8.72	9.42	33.49	0.0	2.0	6.0	16.0	24.0	52.0
Rusholm	1.81	4.37	38.86	0.2	2.0	4.0	6.0	20.0	68.0
Russell	6.19	9.64	30.48	0.0	2.0	4.0	6.0	20.0	68.0
St. Patrick	7.48	6.04	33.42	0.0	8.0	16.0	10.0	20.0	46.0
Shannon	3.87	7.78	31.25	0.0	1.0	7.0	12.0	24.0	56.0
Seaford	9.94	10.58	33.45	0.0	6.0	12.0	10.0	22.0	50.0
Summer	.....	.....	.....	0.0	2.0	7.0	12.0	23.0	56.0
St. George	9.92	2.15	0.25	1.0	9.2	8.6	7.0	18.4	56.8
Simcoe	2.36	1.80	37.27	1.0	2.0	14.0	12.0	18.0	54.0
Triller	8.91	8.77	32.16	0.0	2.0	8.0	12.0	22.0	56.0
Wellesley	7.63	9.17	33.91	0.0	4.0	12.0	8.0	22.0	54.0
Repairs	8.81	3.56	35.21	0.2	5.3	12.7	8.7	19.3	54.0
	1.51	1.08	0.21						

41 Tests.

bly on a few other streets

DETAILED ANALYSIS OF ASPHALTS AND ASPHALT MIXTURES.

Street.	From	To	Contractor.	Asphalt used.	Bitumen in Surface Mixture	Penetration of Asphaltic Cement. (Dow's Machine.)	Refined Asphalt.						Sand Grading.				Inorganic Dust Grading.									
							Physical Examination.		Chemical Analysis.				On No. 10 Sieve.	Pass No. 10 Sieve.	Pass No. 20 Sieve.	Pass No. 30 Sieve.	Pass No. 40 Sieve.	Pass No. 50 Sieve.	Pass No. 60 Sieve.	Pass No. 100 Sieve.	Pass No. 200 Sieve.	On No. 60 Sieve.	Pass No. 80 Sieve.	Pass No. 100 Sieve.	Pass No. 200 Sieve.	
							Specific Gravity.	Flowing Point.	Petroleum.	Asphaltene.	Non-bituminous Organic matter.	Inorganic matter.														
Albion St.	Brock Ave.	296½ ft. west	Constructing and Paving Co.	Trinidad "Pitch Lake"	10.97	55°	1.3409	195° F	43.69	16.19	9.64	30.48	0.0	3.0	6.0	10.0	16.5	37.0	8.5	16.0	3.0	2.0	6.0	10.0	22.0	40.0
Adelaide St.	Church St.	Larvis St.	Warren Bituminous P'g Co.	Californian "Warren's Acme"	9.94	73°	1.3693	200° F	80.69	18.78	0.25	0.28	1.5	3.5	3.0	4.0	11.0	38.0	14.0	14.0	11.0	18.0	5.0	6.0	15.0	40.0
Bernard Ave.	Kendall Ave.	Dupont St.	Constructing and Paving Co.	Trinidad "Pitch Lake"	8.74	45°	1.3693	200° F	42.42	18.81	3.56	35.91	0.0	2.0	3.0	9.0	8.0	36.0	13.0	19.0	16.0	24.0	12.0	4.0	12.0	40.0
Beatrice St.	Arthur St.	400 ft. north	"	"	9.06	43°	1.3560	205° F	43.06	17.48	6.04	33.42	0.0	1.0	3.0	8.5	8.5	35.0	13.5	15.5	15.0	"	"	"	"	"
Baldwin St.	McCall St.	Spadina Ave.	Warren Bituminous P'g Co.	Californian "Warren's Acme"	10.18	39°	1.3693	196° F	79.74	19.27	0.80	0.19	1.0	3.5	2.5	5.5	7.0	43.5	9.0	15.0	11.2	2.0	4.0	5.5	20.0	40.0
Brock Ave.	Queen St.	1,163 ft. north	Barber Asphalt Paving Co.	Trinidad "Pitch Lake"	10.66	35°	1.3692	196° F	40.40	18.10	9.47	32.03	0.0	0.5	1.5	7.0	7.0	37.5	12.0	20.5	14.0	2.0	1.0	2.0	10.0	40.0
Bathurst St., e.s.	Bloor St.	City limits	Constructing and Paving Co.	"	9.40	39°	1.3697	185° F	38.47	18.72	9.42	33.49	0.0	1.5	3.0	9.0	8.0	37.5	11.0	19.0	8.0	1.0	3.5	5.5	24.0	40.0
Bathurst St., e.s.	College St.	Bloor St.	Warren Bituminous P'g Co.	Californian "Warren's Acme"	9.59	65°	1.3697	196° F	40.40	18.10	9.47	32.03	0.0	1.0	2.0	4.0	10.0	38.5	10.5	17.0	15.0	20.0	4.0	6.0	22.0	40.0
Crawford St.	King St.	Queen St.	Barber Asphalt Paving Co.	Trinidad "Pitch Lake"	10.19	46°	1.3692	196° F	40.40	18.10	9.47	32.03	0.0	1.0	1.0	4.5	4.5	33.0	14.5	20.0	21.5	1.0	2.0	1.7	8.0	40.0
Colleen St.	Queen St.	688 ft. north	Constructing and Paving Co.	"	9.16	38°	1.3872	196° F	40.16	18.91	8.77	32.16	0.0	1.0	2.0	7.5	7.5	41.0	14.5	17.0	9.5	2.0	8.0	12.0	22.0	40.0
Dowling Ave.	25 ft. n. of s. limit of G. T. R.	922½ ft. further s'th	"	"	9.66	38°	1.3796	190° F	36.03	19.94	10.58	33.45	0.0	2.0	2.5	8.5	9.0	40.5	13.5	17.0	7.0	10.0	20.0	8.0	18.0	40.0
Givens St.	College St.	361 ft. south	Barber Asphalt Paving Co.	"	9.45	39°	1.3697	196° F	38.46	18.72	9.42	33.49	0.0	1.5	3.0	10.5	9.0	32.0	14.0	14.5	16.0	6.0	14.0	10.0	20.0	40.0
Kendall Ave.	S. side of Wells St.	Dupont St.	Constructing and Paving Co.	"	9.27	43°	1.3590	190° F	38.46	19.47	10.77	31.30	0.0	1.0	3.0	10.5	9.0	32.0	14.0	14.5	16.0	6.0	14.0	10.0	20.0	40.0
King St.	Sherbourne St.	Berkley St.	Warren Bituminous P'g Co.	Californian "Warren's Acme"	9.79	91°	1.3693	196° F	80.69	18.78	0.25	0.28	0.5	2.0	1.5	3.0	8.0	40.5	11.5	18.0	15.0	16.0	4.0	8.0	20.0	40.0
King St.	Dufferin St.	234 ft. w. of Jeffers Ave.	"	"	9.64	58°	1.3693	196° F	40.16	18.91	8.77	32.16	0.0	0.5	1.0	1.5	2.5	11.0	33.0	15.5	20.0	15.0	20.0	10.0	10.0	20.0
Lansdowne Ave.	Dundas St.	849 ft. south	Constructing and Paving Co.	Trinidad "Pitch Lake"	9.57	39°	1.3697	196° F	38.46	18.72	9.42	33.49	0.0	1.0	1.0	8.0	11.5	43.0	15.0	13.5	7.0	2.0	8.0	14.0	24.0	40.0
Lansdowne Ave.	King St.	524 ft. south	Warren Bituminous P'g Co.	Californian "Warren's Acme"	9.78	92°	1.3693	196° F	80.69	18.78	0.25	0.28	0.5	2.0	1.5	3.0	8.0	40.5	11.5	18.0	15.0	16.0	4.0	8.0	20.0	40.0
Meredith Crest	Hamlet St.	Park Road	Constructing and Paving Co.	Trinidad "Pitch Lake"	9.29	42°	1.3409	195° F	43.69	16.19	9.64	30.48	0.0	3.0	5.0	8.0	16.5	40.5	10.5	12.0	4.5	14.0	12.0	6.0	12.0	40.0
Macpherson Ave.	Avenue Rd.	Rathall Ave.	"	"	11.04	50°	1.3762	194° F	38.57	22.36	1.80	37.27	1.0	1.5	2.0	3.0	10.0	37.5	11.0	20.0	14.0	4.0	8.0	10.0	20.0	40.0
Markham St.	Harbord St.	Herrick St.	"	"	9.55	50°	1.3762	194° F	38.57	22.36	1.80	37.27	1.0	1.5	2.0	3.0	10.0	37.5	11.0	20.0	14.0	4.0	8.0	10.0	20.0	40.0
Niagara St.	Queen St.	King St.	"	"	9.46	39°	1.3592	200° F	46.82	14.90	2.92	35.27	0.0	1.5	4.0	7.5	15.0	37.5	9.0	17.5	8.0	4.0	4.0	4.0	14.0	74.0
Ottawa St.	Shelburne Ave.	Summerhill Ave.	"	"	8.35	41°	1.3592	200° F	46.82	14.90	2.92	35.27	0.0	1.5	2.0	4.5	11.0	34.5	9.5	22.0	15.0	14.0	12.0	10.0	20.0	44.0
Rathall Ave.	Macpherson Ave.	760 ft. north	"	"	9.75	35°	1.3697	185° F	38.47	18.72	9.42	33.49	0.0	1.5	3.5	10.0	9.5	42.0	11.0	15.0	7.5	2.0	6.0	16.0	24.0	72.0
Rushmore Rd.	Hepburne St.	"	"	"	9.75	35°	1.3697	185° F	38.47	18.72	9.42	33.49	0.0	1.5	3.5	10.0	9.5	42.0	11.0	15.0	7.5	2.0	6.0	16.0	24.0	72.0
Russell St.	Spadina Ave.	Robert St.	"	"	10.06	53°	1.3959	195° F	44.96	21.81	4.37	38.86	0.2	4.3	7.5	10.7	17.8	33.0	9.3	14.0	3.2	2.0	4.0	6.0	20.0	40.0
St. Patrick St.	Beverley St.	Spadina Ave.	"	"	10.09	51°	1.3409	195° F	43.69	16.19	9.64	30.48	0.0	3.0	6.0	10.0	16.5	37.0	8.5	16.0	3.0	2.0	4.0	6.0	20.0	40.0
Shannon St.	Ossington Ave.	Dovercourt Road	"	"	9.04	48°	1.3560	205° F	43.06	17.48	6.04	33.42	0.0	2.0	4.0	13.5	12.0	39.5	9.5	11.5	8.0	8.0	16.0	10.0	20.0	40.0
Southfork Ave.	Brock Ave.	297 ft. west	"	"	9.16	40°	1.3849	190° F	37.10	23.87	7.78	31.25	0.0	1.5	2.5	6.5	7.0	35.0	18.0	22.5	7.0	1.0	7.0	12.0	24.0	40.0
Summerhill Ave.	Yonge St.	1,115 ft. east	"	"	9.42	35°	1.3796	190° F	36.03	19.94	10.58	33.45	0.0	2.0	2.5	8.5	9.0	40.5	13.5	17.0	7.0	6.0	12.0	10.0	20.0	40.0
St. George St.	Bloor St.	Dupont St.	Warren Bituminous P'g Co.	Californian "Warren's Acme"	10.05	33°	1.3697	196° F	38.46	18.72	9.42	33.49	0.0	1.3	3.0	9.2	9.3	45.0	8.2	17.5	6.5	2.0	7.0	12.0	23.0	70.0
St. Patrick St.	Beverley St.	Spadina Ave.	"	"	10.15	60°	1.3697	196° F	77.68	19.92	1.53	0.25	1.0	3.3	1.7	5.5	7.5	40.7	8.3	19.7	12.3	9.2	8.0	7.0	18.4	70.8
Shannon St.	Ossington Ave.	Dovercourt Road	"	"	10.83	53°	1.3762	194° F	38.57	22.36	1.80	37.27	1.0	1.5	1.5	3.0	9.0	42.0	10.0	22.0	10.1	2.0	14.0	12.0	18.0	74.0
Triller Ave.	Queen St.	Robert St.	"	"	10.02	38°	1.3872	196° F	40.16	18.91	8.77	32.16	0.0	1.0	2.0	7.5	7.5	41.0	14.5	17.0	9.5	2.0	8.0	12.0	22.0	50.0
Wellesley St.	Church St.	Jarvis St.	Barber Asphalt Paving Co.	"	10.18	47°	1.3872	195° F	39.29	17.63	9.17	33.91	0.0	1.0	1.0	3.0	7.0	33.5	15.0	23.0	16.5	4.0	12.0	8.0	22.0	50.0
Repairs.			Constructing and Paving Co.	Trinidad "Pitch Lake" with which is not known.	9.52	29°	1.3693	200° F	42.42	18.81	3.56	35.21	0.2	1.5	3.2	6.7	14.0	39.7	11.2	16.8	6.7	5.3	12.7	8.7	19.3	74.0
					223 Tests.	55 Tests.						35 Tests.										41 Tests.				

* A small proportion of this Asphaltum was mixed with the "Pitch Lake" and used on Colleen St., Lansdowne Ave., Triller Ave. and probably on a few other streets.

In addition to the amounts mentioned above as being saved, we also claim credit for a saving of \$1,145.49 on 17 roadways and sidewalk contracts where our tenders were the lowest and which were accepted by the contractors at our figures, the said saving being the difference between the City's tender price and the contractor's original tender.

Table No. 7 shows in detail all the pavements, roadways and permanent sidewalks constructed during the year. Table No. 11 shows the mileage of concrete and brick walks annually constructed in the City from the year 1899 to the present time.

Table No. 12 gives in detail the number of Local Improvement works constructed from 1892 to 1904 inclusive.

Respectfully submitted.

W. M. MACPHAIL,

Assistant Engineer.

TABLE No. 7.
ASPHALT PAVEMENTS.

Street.	From.	To.	Width Lin. Ft.	Length Lin. Ft.
Abbs	Brook	296½ ft. west	18	296.5
Adelaide	Church	Jarvis	42 $\frac{2}{3}$	624
Bernard	Kendall	Dupont	24	1,078.6
Beatrice	Arthur	400 ft. north	24	400
Baldwin	McCaul	Spadina	24	1,720
Brook	Queen	1,163 ft. north	24	1,163
Bathurst, e. side only	Bloor	City Limit one	side only	3,238
Bathurst, e. side only	College	Bloor one	side only	3,209
Crawford	King	Queen	24	1,171
Callendar	Queen	688 feet north	24	688
Dowling	25 ft. n. of s. limit G. T. R.	622 $\frac{3}{4}$ feet further s.	20	622.7
Givens	College	361 feet south	24	361
Kendall	S. s. Wells	Dupont	24	1,214.3
King	Sherbourne	Berkeley	28	1,000
King	Dufferin	234 ft. w. Jefferson.	28	1,099
Lansdowne	Dundas	849 feet south	20	860
Mowat	King	524 feet south	24	525
Meredith Crest	Huntley	Park Road	24	388
McPherson	Avenue Rd.	Rathnally	21	632
Markham	Harbord	Herrick	24	439
Niagara	King	Queen	24	1207
Ottawa	Shaftesbury	Summerhill	18	360
Rathnally	McPherson	760 feet north	21	760
Rusholme Rd.	College	Hepbourne	21	2,035.6
Russell	Spadina	Robert	24	187
St. Patrick	Beverley	Spadina	24	1,121
Shannon	Ossington	Dovercourt	24	956.3
Seaforth	Brook	297 feet west	20	297
Summerhill	Yonge	1,115 feet east	24	1,115
St. George	Bloor	Dupont	36	3,054
Sincoe	Wellington	Front	34	493.3
Triller Ave.	Queen	Harvard	21	493.5
Wellesley	Church	Jarvis	35	649
				33,457.8

BITULITHIC PAVEMENTS.

Avenue Rd.	Davenport Rd. . . .	W. limit of track . .	24	2,218
Palmerston	College	Bloor	28	3,195.5
Walker	Yonge	West end	22	1,328.5
Woodlawn	Yonge	West end	24	1,330.5
				8,072.5
Spadina Rd				

TABLE No. 7.
ASPHALT PAVEMENTS.

Pavements Sq. Yds.	Curb.			Completed.	Contractor.
	Width. Lin. Inch.	Class.	Length. Lin. Ft.		
591	.....	.....	.....	July 11, 1904	The Con. & Paving Co.
2,624	.....	.....	.....	June 1, 1904	The Warren Bit. Pav. Co.
2,926	.....	.....	.....	Nov. 25, 1904	The Con. & Pav. Co.
1,087	5	Concrete	659	Nov. 17, 1904	" "
4,966	5	"	112	Nov. 25, 1904	The Warren Bit. Pav. Co.
3,525	5	"	2,300	Nov. 11, 1904	The Barber Asphalt Co.
4,200	5	"	3,216	Oct. 22, 1904	The Con. & Paving Co.
4,163	5	"	3,197	July 7, 1904	East side only completed. Warren Bit. Pav. Co.
3,324	5	"	2,398	Nov. 23, 1904	The Barber Asphalt Co.
1,920	5	"	1,456	Aug. 30, 1904	The Con. & Pav. Co.
1,718	5	"	1,277	Oct. 19, 1904	" " "
959	5	"	722	Dec. 1, 1904	The Barber Asphalt Co.
3,627	.....	.....	.....	Nov. 28, 1904	The Con. & Pav. Co.
3,312	.....	.....	.....	June 13, 1904	The Warren Bit. Pav. Co.
3,604	.....	.....	.....	May 23, 1904	" "
1,947	.....	.....	.....	Sept 21, 1904	The Con. & Pav. Co.
1,402	5	Concrete	1,050	Nov. 9, 1904	The Warren Bit. Pav. Co.
1,037	.....	.....	.....	July 25, 1904	The Con. & Pav. Co.
1,499	5	Concrete	1,297	June 4, 1904	" "
1,282	5	"	894	June 6, 1904	" "
3,610	5	"	2,495	May 16, 1904	" "
727	5	"	732	May 11, 1904	" "
1,937	5	"	1,562	Oct. 3, 1904	" "
4,982	5	"	4,120	July 11, 1904	" "
513	5	"	320	July 4, 1904	" "
3,327	4	Stone...	48	Dec. 6, 1904	" "
2,542	.....	.....	.....	Nov. 8, 1904	" "
659	.....	.....	.....	Oct. 19, 1904	" "
3,080	5	Concrete	2,284	Sept 30, 1904	" "
11,637	.....	.....	.....	Aug. 6, 1904	Warren Bit. Pav. Co.
2,010	6	Concrete	925	June 8, 1904	The Con. & Pav. Co.
1,228	5	"	1,061	Aug. 23, 1904	" "
2,565	5	"	1,357	June 20, 1904	The Barber Asphalt Co.
87,930	.....	.....	33,473	.....	.....

BITULITHIC PAVEMENTS.

6,237	6	Concrete	4,858	Dec. 11, 1904	The Warren Bit. Pav. Co.
10,558	5	"	6,600	Sept 17, 1904	" "
3,242	5	"	605	Oct. 22, 1904	" "
3,530	.....	.....	.....	Dec. 3, 1904	" "
23,567	.....	.....	12,063	.....	.....
703	.....	.....	.....	.....	.....
24,270	.....	.....	.....	.....	.....

MACADAM ROADWAYS.

Street.	From.	To.	Width. Lin. Ft.	Length. Lin. Ft.
Chestnut Park Road.	Roxborough.	Cluny.	Varies	1,677
Chestnut Park Road.	Roxborough.	W. limit lot No. 9. .	Varies	410
Cummings.	Boulton.	Wardell.	20	507.1
Cottingham.	Yonge.	1,350 ft. west.	24	1,350
Eastern Ave.	Caroline.	Pape.	24	732
Earnbridge.	Brock.	300 ft. east.	24	300
Elliott.	Broadview.	Munro.	21	417.4
Forrest Rd.	Yonge.	350 ft. west.	15	350.
Gloucester.	Church.	Jarvis.	24	647.8
Marlborough Pl.	Avenue Rd.	646 ft. east.	14	646
Parkview Ave.	Wellesley.	175 ft. north.	24	175
Queen.	Roncesvalles.	1,900 ft. west.	Varies	1,000
Sheridan.	Dundas.	College.	24	831
Stafford.	Clifford.	Wellington.	24	1,194
				10,237.3

TAR MACADAM ROADWAYS.

Belmont.	Yonge.	Davenport Rd.	24	1,082.6
Davenport Pl.	Davenport Rd.	492 ft. east.	18	511
Harrison.	Ossington.	Lakeview.	20	421.6
Lewis.	Queen.	Eastern.	21	944.4
Saunders.	Sorauren.	315 ft. east.	21	315
Salisbury.	Sackville.	192½ ft. west.	18	192
Tiverton Ave.	First.	743 ft. south.	21	743.8
Van Horne.	Dufferin.	Bartlett.	24	143
				4,353.4

CEDAR BLOCK ON GRAVEL.

Norfolk.	Shirley.	312 ft. north.	20	312
Sorauren.	Wright.	Dundas.	24	1,794.6
Vermont.	Palmerston.	Bathurst.	24	593.5
				2,700.1

MACADAM ROADWAYS.

Pavements Sq. Yds.	Curb.			Completed.	Contractor.
	Width. Lin. Inch.	Class.	Length. Lin. Ft.		
4,323	4	Stone ..	4,197	Dec. 6, 1904	The Dom. Pav. & Con. Co.
1,300	4	" ..	1,100	" "	" "
1,129	4	Wood ..	1,016	Nov. 5, 1904	The Con. and Pav. Co.
3,600	4	" ..	2,892	July 27, 1904	W. F. Grant & Co.
2,054	4	" ..	1,564	Nov. 30, 1904	Day labor.
800	5	Concrete	600	Sept. 20, 1904	"
1,052	4	Wood ..	877	Aug. 4, 1904	"
599	5	Concrete	703	Nov. 25, 1904	Godson Con. Co.
1,728	.....	.....	.....	Nov. 1, 1904	Day labor.
1,005	4	Wood ..	658	Oct. 18, 1904	"
469	5	Concrete	350	Nov. 29, 1904	Godson Con. Co.
2,489	4	Wood ..	1,299	July 6, 1904	Day labor.
2,590	5	Concrete	1,785	Oct. 11, 1904	"
3,307	4	Wood ..	2,480	June 6, 1904	"
26,445			19,521		

TAR MACADAM ROADWAYS.

2,971	4	Stone ..	2,283	Oct. 17, 1904	The Con. and Pav. Co.
1,022	.....	.....	.....	Oct. 24, 1904	" "
982	4	Wood ..	867	Aug. 6, 1904	" "
2,248	4	Stone ..	1,953	Aug. 12, 1904	" "
735	5	Concrete	651	Nov. 4, 1904	The Warren Bit. Pav. Co.
384	.....	.....	.....	Sept. 15, 1904	The Con. and Pav. Co.
1,738	5	Concrete	1,487	Oct. 17, 1904	Godson Con. Co.
1,781	5	"	1,294	Aug. 18, 1904	The Con. and Pav. Co.
11,861			8,535		

CEDAR BLOCK ON GRAVEL.

728	4	Wood ..	680	Dec. 2, 1904	The Dom. Pav. & Con. Co.
5,202	4	" ..	3,855	Aug. 27, 1904	" "
1,644	4	" ..	1,249	Dec. 1, 1904	The Con. and Pav. Co.
7,574			5,784		

BRICK OR CONCRETE.

Street.	From.	To.	Width.	Length.
			feet.	lin. ft.
Booth	Queen	Jennina	21	1,068
Dundas	S. S. Bloor	City Limits	26	2,758
Dorset	King	Wellington	21½	432.5
Jarvis	Front	Esplanade	36	384
Lane 1st w. of Church	Lombard	North and west	Varies	190
Lane 1st e. of Yonge	Wellington	South and east	Varies	230
Lane 1st n. of Queen	Gladstone	Northcote	9½	247
Lane 1st s. of Duchess	Ontario	West end	17	426
Shirley	St. Clarens	Lansdowne	20	365.3
St. Nicholas	St. Albans	St. Joseph	14	369
West Market	Front	Esplanade	36	350
Wyatt	Sumach	River	22	582.5
				7,402.3

CONCRETE PAVEMENT.

Spadina Pl	Cecil	280 ft. north	280.
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CONCRETE CURBING.

Street.	From.	To.	Side.	Width.
				feet.
Baldwin	Huron	Spadina	South ..	5
Baldwin	McCaul	Beverley	South ..	5
Shannon	Ossington	Dovercourt Rd	South ..	5
Davenport Pl	Davenport Rd	530 ft. east	North ..	5
Kendall	Bernard	583 ft. north	West ..	5

STONE CURBING.

Adelaide	Church	Francis	South ..	4
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CONSTRUCTION OF TRACK ALLOWANCE.

Street.	From.	To.	Length.	Width.
Dundas	S. S. of Bloor	City Limit	2,758	14

BRICK ON CONCRETE.

Pavements	Curb.			Completed.	Contractor.
	Width.	Class.	Length.		
sq. yds.			lin. ft.		
2,690				Aug. 31, 1904	The Tor. Con. & Pav. Co.
8,436	4	Stone	5,440	Nov. 24, 1904	The Dom. Pav. & Con. Co.
1,970	5	Concrete	882	Nov. 5, 1904	Day labor.
1,874	6	"	379	Nov. 7, 1904	The Dom. Pav. & Con. Co.
234	6	Stone	175	Sept. 20, 1904	Day labor.
481				Sept. 19, 1904	"
263	4	Stone	389	Sept. 3, 1904	John Maguire.
804	4	"	848	Aug. 16, 1904	Day labor.
923	5	Concrete	730	Oct. 22, 1904	"
577	4	Stone	729	June 29, 1904	Queen City Con. Pav. Co.
1,792	6	Concrete	407	Oct. 15, 1904	The Dom. Pav. & Con. Co.
1,428	4	Stone	1,166	Sept. 17, 1904	John Maguire.
20,572			11,145		

CONCRETE PAVEMENT.

646		Oct. 7, 1904	Day labor.
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CONCRETE CURBING.

Length.		Completed.	Contractor.
447		Nov. 17, 1904	The Warren Bit. Pav. Co.
624		Nov. 5, 1904	The Warren Bit. Pav. Co.
957		Sept. 16, 1904	Day labor.
619		Sept. 24, 1904	Day labor.
601		Oct. 22, 1904	Godson Con. Co.
3,248			

STONE CURBING.

492		May 18, 1904	Queen City Con. Pav. Co.
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CONSTRUCTION OF TRACK ALLOWANCE.

Sq. Yards.	Class of Pavement.	Completed.	Contractors.
3,933	Brick	Oct. 29, 1904	The Dom. Pav. & Con. Co.

RECONSTRUCTING OF TRACK ALLOWANCE.

Street.	From.	To.	Length.	Width.
Yonge	Queen	Carlton	3,238	3 ft. 6 in.
McCaul	Queen	College	2,100	} 14 ft. 0 in
			1,276	
College	Yonge	West	3,749	3 ft. 6 in.

GRADING ONLY.

Leslie & Ivy .....	.....	.....	.....	.....
Kenilworth	Queen	1,439 ft. south .....	.....	.....

CONCRETE SIDEWALKS.

Street.	From.	To.	Side.	Width.
				Ft. In.
Adelaide	York	Simcoe	North ..	8
Ann	Church	Mutual	North ..	4 6
Augusta	St. Patrick	College	East ..	5
Arthur	Palmerston	Manning	North ..	6
Arthur	Shaw	Dundas	South ..	6
Alice	Yonge	Teraulay	North ..	5
Alice	Yonge	Teraulay	South ..	5
Anderson	Simcoe	McCaul	North ..	5
Anderson	William	McCaul	South ..	5
Abbs	Brock	296½ ft. west	South ..	3 7
Abbs	Brock	296½ ft. west	North ..	3 7
Ann	Yonge	Church	North ..	5
Baldwin	Huron	Spadina	South ..	5
Baldwin	Beverley	Spadina	North ..	5
Bathurst	King	Wellington	West ..	6
Bathurst	Wellington	Niagara	West ..	6
Bathurst	Front	Niagara	East ..	6
Bathurst	Wellington	Niagara	East ..	6
Bellwoods	Arthur	520 ft. south	West ..	4
Bathurst	Niagara	Bridge	West ..	6
Bernard	Walmer	45 ft. west	North ..	5
Brock	College	Lindsay	East ..	5
Bathurst	Woodsley	Sheppard's Lane	West ..	6
Bernard	Kendall	Dupont	S. & W. ..	5
Bati	Queen	104 ft. south	West ..	8
Bernard	Kendall	Dupont	N. & E. ..	5
Berkeley	Front	Esplanade	West ..	6
Bishop	Davenport	292 ft. west	North ..	4
Bloor	Dufferin	Brock	North ..	5
Brunswick	118' 5" n. of College	Ulster	East ..	5

RECONSTRUCTING OF TRACK ALLOWANCE.

Sq. Yards.	Class of Pavement.	Completed.	Contractors.
.....	Scoria in develstrip.....	.....	Day labor.
Concrete	Brick and concrete. ....	.....	Day labor.
Brick	Brick in devilstrip. ....	.....	Day labor.

GRADING ONLY.

.....	.....	Aug. 9, 1904	Day labor
.....	.....	.....	Day labor.

CONCRETE SIDEWALKS.

Length.	Curb.		Completed.	Contractor.
	Class.	Length.		
Feet.		Feet.		
632	.....	.....	Oct. 28, 1904	The Godson Con. Co.
364.4	5-in. coner.	364	Nov. 3, 1904	The Queen City Con. Pav. Co.
1,683.6	.....	.....	Oct. 22, 1904	A. Gardner & Co.
1,612.3	.....	.....	Oct. 12, 1904	The Tor. Con. & Pav. Co.
544.1	.....	.....	Oct. 13, 1904	A. Gardner & Co.
724.2	.....	.....	Sept. 12, 1904	The Crescent Con. Pav. Co.
697.1	.....	.....	Sept. 15, 1904	" "
517	5-in. coner.	488.5	June 17, 1904	A. Gardner & Co.
247.7	"	247.7	June 14, 1904	" "
310.5	"	310.5	June 9, 1904	" "
310.5	"	310.5	June 9, 1904	" "
930.3	"	930	April 28, 1904	The Grant Con. Co.
458	.....	.....	Nov. 24, 1904	Day labor.
1,026.6	5-in. coner.	1,048	Nov. 3, 1904	The Grant Con. Co.
431.8	"	431.8	Oct. 22, 1904	Day labor.
248	"	248	Oct. 22, 1904	"
402.2	.....	.....	Oct. 21, 1904	"
255	5-in. coner.	255	Oct. 15, 1904	"
518.6	.....	.....	Oct. 17, 1904	The Tor. Con. & Pav. Co.
458	.....	.....	Oct. 18, 1904	Day labor.
45.6	5-in. coner.	45.6	Sept. 30, 1904	"
305	.....	.....	Sept. 27, 1904	The Tor. Con. & Pav. Co.
122.9	.....	.....	Aug. 27, 1904	R. A. Rogers & Co.
915	5 in. coner.	915	Aug. 17, 1904	The Crescent Con. Pav. Co.
104	"	104	Aug. 13, 1904	W. R. Payne.
863.5	"	863.5	Aug. 10, 1904	The Crescent Con. Pav. Co.
395	"	395	July 5, 1904	" "
295.1	.....	.....	July 5, 1904	Day labor.
855	.....	.....	Aug. 26, 1904	A. Gardner & Co.
1,187.2	.....	.....	June 22, 1904	The Crescent Con. Pav. Co.

CONCRETE SIDEWALKS—Continued.

Street.	From	To	Side.	Width.
				Ft. In.
Booth	Natalie	612 ft. north	West	5
Bernard	Spadina	Walmer	South	5
Brock	Middleton	Florence	East	5
Bloor	Walmer	179' e. of Bathurst	North	6
Cottingham	592' e. of Avenue Rd	1,020' farther east	South	5
Cottingham	Avenue Rd	Rathnally	South	5
Crescent Road	Scarth Rd	178½ ft. east	South	4
Church	Charles	128 ft. s. of Bloor	East	6
Clinton	College	Mansfield	West	5
Collier	Park Rd	372 ft. east	South	4
Crawford	Queen	Bridge	West	5
Crawford	804½' n. of Queen	Bridge	East	5
Cunningham	Brock	297 ½ feet west	South	5
Carlton	Seaton	Parliament	South	6
Czar	101½ feet w. of n.	511 feet further w.	North	5
Chestnut	Elm	Christopher	West	6
Czar	North	Queen's Park	South	5
Davenport Pl.	Davenport Rd	358 feet east	North	4
Defoe	Tecumseth	Niagara	South	5
Dovercourt	Queen	Argyle	East	4 6
Dovercourt	Queen	Argyle	West	4 6
Dowling	27½ ft. n. of s. limit of G.T.R	782½ feet further s.	West	5
Dupont	Davenport	Huron	North	5
D'Arey	McCaul	Beverley	South	5
Dovercourt	St. Anne's	College	West	5
Dufferin	Florence	516 feet south	West	5
Davenport Pl.	Davenport Rd	505 feet east	South	4
Dovercourt	Argyle	McKenzie Cr	West	5
Davenport Rd	Yonge	496' east of Av. Rd	North	6
Dufferin	Florence	Dundas	West	5
Dupont	Davenport	St. George	South	5
Euclid	Clster	Herrick	East	6
Earnbridge	Brock	300 feet east	North	4
Earnbridge	Brock	300 feet east	South	4
Edward	Yonge	Teraulay	South	5
Edward	Yonge	University	North	5
Euclid	Bloor	Herrick	East	6
Farley	Spadina	Bathurst	South	5
Farley	Bathurst	Tecumseth	South	5
Farley	Spadina	Bathurst	North	5
First Ave.	DeGrassi	Logan	North	5
Foxley	Dundas	Dovercourt	South	5
Franklin	Royce	Edith	West	4
Farley	Tecumseth	Niagara	South	5
Farley	Tecumseth	Niagara	North	5
First Ave.	Logan	East limit No. 201	South	4
Front	Jarvis	George	North	11 6

CONCRETE SIDEWALKS—Continued.

Length.	Curb.		Completed.	Contractor.
	Class.	Length.		
Feet.		Feet.		
658	5-in. concr.	658	June 9, 1904	The Con. & Pav. Co.
256.3	"	256.3	May 28, 1904	" "
269.5	"	"	May 28, 1904	The Tor. Con. & Pav. Co.
1,317	"	"	May 11, 1904	The Grant Con. Co.
1,020	"	"	Nov. 22, 1904	Day labor.
646.6	"	"	Nov. 18, 1904	" "
138.2	"	"	Nov. 2, 1904	" "
424.9	"	"	Oct. 14, 1904	The Queen City Con. Pav. Co.
543	5-in. concr.	572	Sept. 15, 1904	The Con. & Pav. Co.
361.7	"	"	Sept. 16, 1904	Day labor.
1,512.6	"	"	Sept. 10, 1904	The Grant Con. Co.
762.2	"	"	Sept. 15, 1904	" "
357.9	5-in. concr.	343	Aug. 25, 1904	The Grant Con. Co.
381.2	"	"	Aug. 25, 1904	The Queen City Con. Pav. Co.
482	"	"	July 30, 1904	The Con. & Pav. Co.
642	5-in. concr.	654	July 26, 1904	" "
1,250.6	"	"	May 27, 1904	The Tor. Con. & Pav. Co.
355.8	"	"	Nov. 24, 1904	A. Gardner & Co.
743	5-in. concr.	743	Oct. 28, 1904	The Con. & Pav. Co.
956	"	974	Oct. 24, 1904	The Cres. Con. & Pav. Co.
978	"	984	Oct. 24, 1904	" "
744.2	"	"	Aug. 24, 1904	W. R. Payne.
575	"	"	Aug. 13, 1904	The Grant.
618.8	5-in. concr.	605.3	Aug. 9, 1904	The Tor. Con. & Pav. Co.
678.5	"	"	Aug. 6, 1904	The Con. & Pav. Co.
530	"	"	Aug. 3, 1904	The Grant Con. Co.
493.2	5-in. concr.	493.2	Aug. 4, 1904	A. Gardner & Co.
603.7	"	607.7	June 20, 1904	The Tor. Con. & Pav. Co.
1,993.4	"	2,070	June 4, 1904	The Grant Con. Co.
1,290.2	"	"	May 19, 1904	The Crescent Con. Pav. Co.
287.2	"	"	April 30, 1904	" "
1,026	"	"	laid over till '05	Day labor.
316.5	"	"	Nov. 3, 1904	" "
315	"	"	Nov. 3, 1904	" "
719	5-in. concr.	719	July 18, 1904	Harvard & Leach Pav. Co.
1,716.3	"	1,716	July 13, 1904	R. A. Rogers & Co.
840.2	"	"	May 25, 1904	The Crescent Con. Pav. Co.
1,806.9	5-in. concr.	1,863	Nov. 16, 1904	The Tor. Con. & Pav. Co.
638	"	"	Oct. 27, 1904	R. A. Rogers.
1,852.7	5-in. concr.	1,852.7	Oct. 20, 1904	" "
880	"	"	Sept. 1, 1904	The Queen City Con. Pav. Co.
948.6	5-in. concr.	939.7	Aug. 27, 1904	A. Gardner & Co.
310.4	"	310.4	Aug. 2, 1904	The Tor. Con. & Pav. Co.
854.2	"	"	June 16, 1904	R. A. Rogers & Co.
858.4	"	"	June 16, 1904	" "
183.9	5-in. concr.	170.8	June 6, 1904	The Con. & Pav. Co.
271.4	"	"	May 6, 1904	Harvard & Leach Pav. Co.

CONCRETE SIDEWALKS—Continued.

Street.	From	To	Side.	Width.	
				Ft.	In.
First Ave.	Broadview	Bolton	North	5	
Frederick	King	136 feet north	West	5	
Gloucester	Church	Jarvis	North	5	
Grange Rd.	McCaul	John	South	5	
Grace	College	233 feet south	West	5	
Grace	College	494 feet north	Both	5	
Grange	John	Beverley	South	5	
Gilead & Coatsworth.	King	Eastern	East	3	
Gerrard	Broadview	Howland	North	5	
Gerrard	Howland	103 $\frac{3}{4}$ ft. east	North	5	
Glen Rd.	Elm	Maple	West	5	
Gerrard	Sumach	River	South	6	
Grace	Arthur	Henderson	East	5	
Glen Rd.	163 $\frac{3}{4}$ n. of Maple	Elm	East	5	
Grace	College	Henderson	East	5	
Gerrard	Yonge	Jarvis	North	6	
Gerrard	Church	Jarvis	South	6	
Gilead & Coatsworth.	King	Eastern	West	3	
Hepbourne	Ossington	Dovercourt	North	5	
Heward	Queen	Eastern	West	4	6
Howard	Bleeker	Ontario	South	5	
Hamilton	Queen	Paul	West	4	
Hooper	Lakeshore Rd.	733 ft. north	C.	6	
Hamburg	Hallam	Van Horne	East	4	6
Jarvis	Front	184 $\frac{1}{2}$ ft. north	East	12	
King	John	333 feet east	South	13	
Kendal	150 ft. s. of Dupont	Bernard	East	5	
Kendal	Bernard	Wells	West	5	
Kendal	Castle	Bernard	East	5	
King	Power	Sackville	North	9	
King	Bathurst	Niagara	South	6	
King	Sackville	Sumach	South	8	
King	75 ft. e. of Berkeley	Parliament	North	8 $\frac{1}{2}$ to 9 $\frac{1}{2}$	
King	Simcoe	333 feet east of John	South	8	
King	Niagara	Walnut	North	6	
King	Dufferin	1715 $\frac{1}{2}$ feet east	North	6	
Lowther	Howland	Albany	North	6	
Logan	Queen	Natalie	East	5	
Lansdowne	Dundas	Shirley	East	5	
Lansdowne	120 feet n. of Queen	Graham	West	5	
LaPlante	Hayter	College	West	3	7
Lansdowne	330 $\frac{1}{2}$ ft s. of Dundas	539 feet further s.	West	4	
Lansdowne	Queen	Graham	East	5	
La Plante	Gerrard	Hayter	West	4	
Lombard	Church	Jarvis	North	6	
Lansdowne	Dundas	230 $\frac{1}{2}$ feet s.	West	6	
Lowther	Madison	Huron	North	5	
Margaretta	Dundas	College	East	4	

CONCRETE SIDEWALKS—Continued.

Length.	Curb.		Completed.	Contractor.
	Class.	Length.		
Feet.		Feet.		
830	.....	.....	April 27, 1904	The Queen City Con. Pav. Co.
135.5	5-in. coner.	135	April 26, 1904	The Tor. Con. & Pav. Co.
651	"	651	Nov. 18, 1904	The Con. & Pav. Co.
333.5	"	339	Oct. 24, 1904	The Grant Con. Co.
261	"	261	Nov. 16, 1904	The Tor. Con. & Pav. Co.
470.6	"	470.6	w.s. comp. only	Harvard & Leach Pav. Co.
252.3	"	230	Oct. 10, 1904	The Con. & Pav. Co.
384	.....	.....	Oct. 3, 1904	A. Gardner & Co.
1,493.5	.....	.....	Sept. 17, 1904	The Queen City Con. Pav. Co.
116.5	.....	.....	Sept. 19, 1904	" "
324	.....	.....	Sept. 6, 1904	Day labor.
572.5	.....	.....	Aug. 4, 1904	R. A. Rogers & Co.
1,114	5-in. coner.	1,114	June 17, 1904	Harvard & Leach Pav. Co.
160	.....	.....	June 17, 1904	Day labor.
357	5-in. coner.	363	May 30, 1904	The Con. & Pav. Co.
1,539.5	.....	.....	May 31, 1904	The Crescent Con. Pav. Co.
606.4	.....	.....	April 30, 1904	The Tor. Con. & Pav. Co.
384.1	.....	.....	Sept. 15, 1904	A. Gardner & Co.
863.3	5-in. coner.	863	Nov. 5, 1904	The Crescent Con. Pav. Co.
957	"	957	Oct. 26, 1904	The Queen City Con. Pav. Co.
427	.....	.....	Oct. 27, 1904	A. Gardner & Co.
559.6	5-in. coner.	559.6	Aug. 25, 1904	The Crescent Con. Pav. Co.
742.1	.....	.....	July 25, 1904	The Grant Con. Co.
932	5-in. coner.	932	June 15, 1904	W. R. Payne.
196	6-in. coner.	200	Nov. 1, 1904	Day labor.
350.8	.....	.....	laid over till '05	"
819	5-in. coner.	825	Oct. 5, 1904	"
243	"	243	Oct. 5, 1904	"
672.1	"	678	Oct. 5, 1904	Harvard & Leach Pav. Co.
599.2	.....	.....	Sept. 24, 1904	The Crescent Con. Pav. Co.
1,294.7	.....	.....	Sept. 26, 1904	R. A. Rogers & Co.
596.6	.....	.....	July 25, 1904	The Queen City Con. Pav. Co.
251	6-in. coner.	242	July 25, 1904	R. A. Rogers & Co.
624.2	.....	.....	July 27, 1904	Day labor.
283.4	.....	.....	July 28, 1904	The Grant Con. Co.
1,646.5	.....	.....	July 20, 1904	The Crescent Con. Pav. Co.
223.3	.....	.....	Sept. 3, 1904	Day labor.
432	.....	.....	Aug. 5, 1904	The Queen City Con. Pav. Co.
813.2	5-in. coner.	813.2	July 28, 1904	The Tor. Con. & Pav. Co.
2,228.5	"	2,228.5	July 15, 1904	" "
548	"	548	July 7, 1904	The Grant Con. Co.
511.2	"	511.2	June 15, 1904	The Tor. Con. & Pav. Co.
2,430.4	"	2,430.4	June 6, 1904	Harvard & Leach Pav. Co.
234.9	"	234.9	May 21, 1904	Day labor.
549.1	.....	.....	May 26, 1904	The Queen City Con. Pav. Co.
353	5-in. coner.	353	May 3, 1904	The Grant Con. Co.
272.3	.....	.....	April 18, 1904	Day labor.
548	.....	.....	Nov. 5, 1904	Day labor.

CONCRETE SIDEWALKS—Continued.

Street.	From	To	Side.	Width.	
				Ft.	In.
Mutual	Gerrard	570½ feet south	East	5	
McAlpine	McMurich	Davenport	South	4	
Marlboro Pl	Avenue Road	646 feet east	South	4	
McPherson	Yonge	686 feet west	West	5	
Manning	Barton	Yarmouth	West	5	
Maple Ave	Glen Rd	175 feet west	North	5	
Maple Grove	Brock	O'Hara	North	4	6
Maple Grove	Brock	O'Hara	South	4	
Mutual	Gerrard	Gould	West	5	
Munro	Queen	Mt. Stephen	East	4	
Marion	O'Hara	Lansdowne	South	5	
Markham	Harbord	Herrick	West	5	
Maitland Pl	Homewood	West end	N.S.&W.	4	
Markham	Robinson	Arthur	West	5	
Meredith Cr	Park Rd	Huntley	Both	5	
McPherson	Avenue Rd	Rathnally	North	5	
Margaretta	Bloor	960 feet north	West	4	6
McPherson	Avenue Rd	Rathnally	South	5	
Marion	O'Hara	135' w. of W. Lodge	North	5	
MacDonell	Queen	2,826 ft. north	East	5	
Marion	Lansdowne	MacDonell	North	5	
Morris	Huron	Spadina	South	4	
McCaul	Baldwin	College	West	6	
McCaul	St. Patrick	Baldwin	West	6	
Manning	Harbord	Bloor	East	5	
Murray	Orde	116½ ft. north	West	4	
Manning	Ulster	Harbord	East	5	
McCaul	Renfrew Pl	595 feet north	East	6	
Niagara	King	Queen	West	5	
Nelson	John	Duncan	North	5	
Ossington	College	Dewson	West	5	
Orchard	Huron	Spadina	North	3	
Niagara	King	Queen	East	5	
Nelson	John	Duncan	South	5	
Ottawa	Shaftesbury	Summerhill	East	3	7
Ottawa	Shaftesbury	Summerhill	West	3	7
Palmerston	College	Bloor	West	6	
Pape	Queen	Eastern	West	4	
Perth	Royce	250 feet north	East	4	
Park Rd	Bloor	Bismark	East	4	
Portland	King	Front	East	5	
Peter	Adelaide	Richmond	East	6	
Pearl	93 ft. e. of York	541 ft. further east	South	6	
Queen	Dovercourt	Lisgar	South	10	6
Queen	Sackville	246 ft. east	Power South	6	
Queen	Parliament	Power	South	9	
Queen	23 ft. e. of Woodbine	770 ft. e. of Lee	South	5	
Queen	Woodbine	230 ft. east	South	5	

CONCRETE SIDEWALKS—Continued.

Length.	Curb.		Completed.	Contractor.
	Class.	Length.		
Feet.		Feet.		
573	5-in. coner.	573	Nov. 8, 1904	Godson Con. Co.
354.1	"	354	Nov. 8, 1904	Day labor.
650.1	"	650.1	June 16, 1904	The Crescent Con. Pav. Co.
659	"	657	Oct. 18, 1904	The Grant Con. Co.
1,231	5-in. coner.	1,231	Sept. 30, 1904	The Con. & Pav. Co.
186	"	186	Sept. 8, 1904	Day labor.
454	"	454	Aug. 23, 1904	The Grant Con. Co.
444	"	444	Aug. 10, 1904	A. Gardner & Co.
590.2	"	584.5	Aug. 10, 1904	W. R. Payne.
1,873	"	1,900	July 30, 1904	"
610	.....	.....	July 21, 1894	The Tor. Con. & Pav. Co.
406	.....	.....	July 11, 1904	The Grant Con. Co.
645.4	5-in. coner.	617.5	July 14, 1904	The Con. & Pav. Co.
1,242	.....	.....	June 29, 1904	The Crescent Con. Pav. Co.
781.6	5-in. coner.	781.6	June 28, 1904	The Queen City Con. Pav. Co.
625	.....	.....	June 24, 1904	R. A. Rogers & Co.
962	5-in. coner.	962	June 16, 1904	The Grant Con. Co.
636	.....	.....	June 23, 1904	R. A. Rogers & Co.
431.3	.....	.....	June 1, 1904	The Tor. Con. & Pav. Co.
2,766.5	5-in. coner.	2,812.5	May 21, 1904	The Con. & Pav. Co.
295	"	295	May 20, 1904	The Crescent Con. Pav. Co.
467.5	.....	.....	May 20, 1904	W. R. Payne.
1,065.2	.....	.....	May 11, 1904	"
648	5-in. coner.	672	May 11, 1904	The Crescent Con. Pav. Co.
1,237.7	.....	.....	May 9, 1904	The Tor. Con. & Pav. Co.
114	5-in. coner.	107.6	May 9, 1904	Day labor.
614	.....	.....	April 30, 1904	R. A. Rogers & Co.
559.8	.....	.....	May 2, 1904	A. Gardner & Co.
1,122.2	.....	.....	Sept. 8, 1904	The Con. & Pav. Co.
382	5-in. coner.	382	Aug. 12, 1904	The Queen City Con. Pav. Co.
928.2	.....	.....	Aug. 31, 1904	The Grant Con. Co.
488.5	.....	.....	Sept. 3, 1904	A. Gardner & Co.
1,141	.....	.....	Aug. 27, 1904	The Con. & Paving Co.
382	5-in. coner.	383	Aug. 17, 1904	The Queen City Con. Pav. Co.
360	.....	.....	June 27, 1904	The Con. & Paving Co.
360	.....	.....	June 16, 1904	"
3,069.7	.....	.....	Nov. 19, 1904	A. Gardner & Co.
954.9	5-in. coner.	976	Aug. 29, 1904	The Tor. Con. & Pav. Co.
251	"	251	Aug. 3, 1904	"
332.6	"	332.6	July 8, 1904	W. R. Payne.
1,024	"	1,036	June 4, 1904	"
429.8	.....	.....	June 3, 1904	Day labor.
540.7	.....	.....	May 13, 1904	A. Gardner & Co.
323.8	6-in. coner.	350	Sept. 21, 1904	W. R. Payne.
250.2	.....	.....	July 16, 1904	The Queen City Con. Pav. Co.
244.5	.....	.....	July 19, 1904	"
2,310.6	.....	.....	May 28, 1904	A. Gardner & Co.
231.2	.....	.....	May 11, 1904	The Queen City Con. Pav. Co.

CONCRETE SIDEWALKS--Continued.

Street.	From	To	Side.	Width.
				Ft. In.
Rathnally	MacPherson	826 ft. north	West ..	5
Richmond	Victoria	126½ ft. w. of Church	South ..	11
Rosedale Rd.	Crescent	667 ft. south	East....	4
River	Mark	Oak	East....	5
Richmond	Duncan	John	North ..	6
Rose.....	St. James ..	141 ft. north	West ..	5
Roxborough	W. limit of No. 170 ..	213 ft. further east ..	North ..	5
Simcoe	Front	Wellington.....	West ..	6 & 8
Summerhill.....	Yonge	1115 ft. east	North ..	6
South Drive	Crescent Rd.	May.....	North ..	4
St. Patrick	Spadina	Esther	South ..	6
South Drive	Dunbar	Glen Rd.	South ..	4
Shuter	Jarvis	George	South ..	5
Sherbourne	51 7 12' s. of Queen ..	Duchess	East....	6
Sheridan	Dundas	324 ft. n. of Bank ..	East....	5
Spadina	St. Andrews	90 ft. north	West ..	11 6
Spadina	Grange	Baldwin	East....	8
Spadina	Queen	81 ft. north	West ..	6
St. Joseph	St. Vincent	653 ft. west	South ..	6
Seaforth	Brock	281 ft. west	North ..	4
Seaforth	Brock	281 ft. west	South ..	4
Simcoe	King	Wellington.....	West ..	6
St. George	Lowther	116 ft. south	West ..	6
Sackville	King	Eastern	East....	5
Spruce	122½' e. of Parliam't ..	Sackville.....	North ..	5
St. Paul	Queen	King	East....	4
Spruce	Parliament.....	Sackville	South ..	5
Seaton	Queen	Wilton	West ..	5
Sydenham	Ontario	Parliament.....	North ..	5
Sydenham	Ontario	Berkeley.....	South ..	5
Salisbury	Sackville.....	204½ ft. west.....	South ..	3 7
St. Paul	King	Queen	West ..	4
Salisbury	Sackville.....	105½ ft. west.....	North ..	3 6
Sherbourne	King	Britain	West ..	6
Sussex	Huron.....	St. George	South ..	5
Spadina	St. Patrick.....	69 ft. south	West ..	10
Shuter	Mutual	Dalhousie	South ..	6
Shuter	Bond	138 ft. west	South ..	6
St. Albans	Yonge	263½' e. Queen's Pk.	North ..	6
St. Patrick	Huron.....	Spadina	North ..	6
Smith.....	620' e. of Broadview ..	250 ft. further east ..	South ..	5
Smith.....	570' e. of Broadview ..	45 ft. further east ..	South ..	5
Sherbourne	Front	Esplanade ...	West ..	6
Trinity Sq.	Yonge	220 ft. west	North ..	5
Trinity Sq.	a point running east. ..	a point further west ..	E. & N ..	4
Treford Pl.	Claremont	Bellwoods.....	South ..	4
University	Osgoode	Armory	East....	.....
Verral Ave.	Natalie	190 feet south	West ..	4

CONCRETE SIDEWALKS—Continued.

Length.	Curb.		Completed.		Contractor.
	Class.	Length.			
Feet.		Feet.			
779			Nov. 18, 1904		Day labor.
436.9	6-in. coner.	436.9	Oct. 3, 1904		A. Gardner & Co.
674.2			July 21, 1904		Harvard & Leach Pav. Co.
666			June 15, 1904		The Con. & Pav. Co.
389.5	5-in. coner.	389.5	May 19, 1904		Day labor.
160.7			April 22, 1904		The Queen City Con. Pav. Co.
179.2	5-in. coner.	179	April 23, 1904		The Crescent Con. Pav. Co.
206.6			June 29, 1904		Day labor.
1,147			Oct. 20, 1904		The Con. & Pav. Co.
419	5-in. coner.	414	Oct. 13, 1904		" "
812.1			Sept. 30, 1904		Godson Con. Co.
504.5	5-in. coner.	510	Sept. 6, 1904		W. R. Payne.
250			Sept. 13, 1904		Day labor.
325.5			Sept. 3, 1904		The Tor. Con. & Pav. Co.
537.4			Sept. 8, 1904		" "
111.2			Sept. 8, 1904		W. R. Payne.
1,085.3			Aug. 22, 1904		The Con. & Pav. Co.
80.5			Aug. 9, 1904		" "
682.7			Aug. 24, 1904		R. A. Rogers.
296	5-in. coner.	296	Aug. 9, 1904		The Grant Con. Co.
300.5	"	300.5	Aug. 9, 1904		" "
450			July 30, 1904		Day labor.
126.3			July 15, 1904		" "
387.5	5-in. coner.	387.5	July 8, 1904		The Crescent Con. Pav. Co.
644.6			July 11, 1904		The Queen City Con. Pav. Co.
578.3	5-in. coner.	578.3	July 4, 1904		The Con. & Pav. Co.
870.5			July 5, 1904		The Queen City Con. Pav. Co.
1,387	5-in. coner.	1,381	June 30, 1904		W. R. Payne.
589.5	"	589.5	June 24, 1904		The Grant Con. Co.
267.5	"	267.5	June 25, 1904		" "
202.2	"	195.6	June 29, 1904		The Queen City Con. Pav. Co.
587.2	"	587.2	June 23, 1904		The Con. & Pav. Co.
118.9	"	110	June 21, 1904		Day labor.
832.9			June 1, 1904		Harvard & Leach Pav. Co.
424			May 27, 1904		Day labor.
88.9			May 30, 1904		A. Gardner & Co.
202			May 17, 1904		R. A. Rogers & Co.
134.1			May 16, 1904		" "
1,285			May 10, 1904		The Queen City Con. Pav. Co.
436.8			May 12, 1904		The Tor. Con. & Pav. Co.
249.9			May 4, 1904		" "
45	5-in. coner.		May 4, 1904		" "
358			April 25, 1904		" "
227			July 16, 1904		R. A. Rogers.
210.5	5-in. coner.	210	July 18, 1904		R. A. Rogers & Co.
272.8	"	272	July 14, 1904		Day labor.
297.1			June 10, 1904		Queen City Con. Pav. Co.
190.3	5-in. coner.	190.3	Aug. 26, 1904		The Crescent Con. Pav. Co.

CONCRETE SIDEWALKS—Continued.

Street.	From	To	Side.	Width.
				Ft. In.
Victoria	Queen	Shuter	East	6
Walker	Yonge	1328½ feet west	North	4
Wellesley	Sherbourne	Homewood Pl	North	6
Wilton	Yonge	Church	South	6
Wellington	John	Peter	South	6
Withrow	Broadview	629 ft. east	South	6
Wilton	Parliament	Poulett	South	7
Wilton	Parliament	Sumach	South	6
Wellington	Spadina Ave	Portland	North	6
Walmer Rd	Bernard	250 ft. further n.	West	5
Wright	MacDonell	Sorauren	North	5
Wilton	Sumach	River	South	5
Wellesley	Jarvis	333 feet east	South	6
Woodlawn	Yonge	West End	North	5
Woodlawn	Yonge	West End	South	5
Wilton	Mutual	Jarvis	North	5½
Wilton	Church	George	South	5
Wellesley	Yonge	Church	South	6
Wilton	Seaton	Ontario	South	6
Defoe	Tecumseth	Niagara	North	5
Czar	North	101 feet west	North	5
College	Opposite S.P.S .....	.....	North	8
Front	At corner of Simcoe .....	.....	North	8
Simpson	Broadview	Howland	South	5
Shuter	Yonge	144 ft. east	South	10¾
King	Corner of Duncan	Street	N. E.	10 8
Louisa	Opposite The T. Ea	ton Co.	North	10 3
Albert	Yonge	20 feet west	North	15 4
Albert	20 ft. west of Yonge	Lane	North	10 5
Yonge	Opposite Brown's .....	.....	East	11 7
Temperance	Opposite No. 14	No. 20	North	Varied
Temperance	Opposite Star Theatre .....	.....	South	Varied
Johnson Lane	Adelaide	To a point south	West	3 8
Spadina Rd.	A point s. of Dupont	A pt. further south	West	5
Havelock	Opposite No 110	No. 128	West	4 6
Foxley	Corner Dundas .....	.....	S.-West	10 2
King	Opposite Crown Bank	No. 34	North	11 1
Sherbourne (north) ..	Opposite No. 38 .....	.....	West	6
Yonge	Opposite No. 186 .....	.....	West	12
Carr	Opposite Lawrence	Bakery	South	5
Pearl	Opposite No. 70 .....	.....	North	6
Front	Parliament	Trinity	South	6
Dupont	N.E. cor. Spadina	Road	North	13 4
Rose Ave	St. James	A point north	East	5
Walker Ave	Opposite No. 67 .....	.....	South	4
Adelaide	Cor. Simcoe .....	.....	S.-East	12 8
Power	A point s. of Queen	A pt. further south	East	6
Sackville	Queen	A point south	West	5

CONCRETE SIDEWALKS—Continued.

Curb.					
Length.	Class.	Length.	Completed.	Contractor.	
Feet.		Feet			
580	5-in. concr.	568.2	June 6, 1904	The Queen City Con. Pav. Co.	
1,328.5	"	1,328.5	Oct. 22, 1904	Harvard & Leach Pav. Co.	
316.8	"	"	April 23, 1904	"	
791.1	"	"	May 19, 1904	W. R. Payne	
635.8	"	"	May 20, 1904	The Tor. Con. & Pav. Co.	
636.3	"	"	June 2, 1904	The Queen City Con. Pav. Co.	
147.4	"	"	May 13, 1904	"	
1,369	"	"	May 11, 1904	R. A. Rogers & Co.	
1,339.8	"	"	July 11, 1904	A. Gardner & Co.	
282.7	"	"	July 18, 1904	Day labor.	
797.2	5-in. concr.	806	Sept. 22, 1904	The Tor. Con. & Pav. Co.	
604.5	"	598.5	Sept. 21, 1904	Day labor.	
329	"	"	Sept. 20, 1904	Harvard & Leach Pav. Co.	
1,319.1	5-in. concr.	1,319	Oct. 15, 1904	The Warren Bit. Pav. Co.	
1,332	"	1,332	Oct. 31, 1904	"	
265.8	"	"	Sept. 29, 1904	The Queen City Con. Pav. Co.	
834.6	"	"	Oct. 6, 1904	"	
938.2	"	"	Nov. 9, 1904	W. R. Payne.	
232.3	"	"	Nov. 16, 1904	Day labor.	
749	5-in. concr.	749	Nov. 7, 1904	The Con. & Pav. Co.	
115.4	"	"	July 30, 1904	"	
551	"	"	Aug. 9, 1904	Day labor.	
23.5	"	"	June 29, 1904	"	
1,497.4	"	"	Sept. 9, 1904	A. Gardner & Co.	
143.7	"	"	Nov. 9, 1904	The Queen City Con. Pav. Co.	
72.1	"	"	"	Private.	
127.7	"	"	"	"	
20	"	"	"	"	
87.8	"	"	"	"	
64.8	"	"	"	"	
73.7	5-in. concr.	73.7	"	"	
69.4	"	"	"	"	
72.9	"	"	"	"	
149.6	"	"	"	"	
309	5-in. concr.	309	"	"	
53.6	"	"	"	"	
26.4	"	"	"	"	
50	"	"	"	"	
24	"	"	"	"	
91.8	5-in. concr.	91.8	"	"	
84.6	"	"	"	"	
612.9	"	"	"	"	
26.7	"	"	"	"	
46.2	"	"	"	"	
28.4	5-in. concr.	28.4	"	"	
51.8	"	"	"	"	
139.8	"	"	"	"	
113	5-in. concr.	113	"	"	

CONCRETE SIDEWALKS—*Continued.*

Street.	From	To	Side.	Width.
				Ft. In.
Gerrard	De Grassi	A point east	South	Varied
Gerrard	Opposite No. 647 .....	.....	South	10 6
Oak	Opposite Nos. 111, 113, 115 .....	.....	South	5
Empress Crescent	Opposite No. 2	No. 12	North	5
Ulster	Euclid	A point east	South	5
Yonge	Opposite The T. Eaton's Store .....	.....	West	12
Trinity Sq.	End of Contract westernly .....	.....	North	4 6
Wellesley	Opposite approach to lane e. of Sherb'ne .....	.....	North	Varied
Yonge	Opposite Cole's store .....	.....	East	12 4
Bloor	Opposite No. 469 .....	.....	South	15 9
Stanley Terrace	Opposite Nos. 2 & 4 .....	.....	West	3
Bathurst	Queen	A point north	West	6
Yonge	Corner Shuter .....	.....	East	12
Arthur	Dundas	A point east	South	8 7
River	A pt. s. of Gerrard	Bell	East	5
Dufferin	Opposite Dominion	Radiator Co.	West	5
West Lodge Ave	Opposite No. 13 .....	.....	East	5
King	Cor. of Stafford St. ....	.....	South	6
Stafford	Cor. of King St. ....	.....	East	4
Berkeley	Queen	Lane	West	5
Sumach	St. Davids	Wilton	West	5
St. Davids	Sumach	A point west	North	5
Whiteside's Pl	Sumach	A point west	Both	4
Queen	Cor. of Broadview Ave .....	.....	N.-West	11 & 12
Bulwer	Spadina	A point east	South	4
Bathurst	Stewart	Victoria Square	East	5
Spadina Ave	Cor. Queen .....	.....	N.-W. & N.-E.	11 2 15 6
Power	King	A point north	East	18 4
King	Between Power and Trinity Sq.	Sackville	North	9
Lane	Trinity Sq.	Alice .....	.....	4
Brunswick Ave	Opposite Nos. 341, 343 .....	.....	East	5
Gerrard	Cor. Church .....	.....	N.-West	16 6
Dupont	Cor. Davenport .....	.....	S.-West	9
Taylor	Opposite Mr. Cowdy's Property .....	.....	.....	3 6

CONCRETE SIDEWALKS—*Continued.*

Length.	Curb.		Completed.	Contractor.
	Class.	Length.		
Feet.		Feet.		
109.2	5-in. concr.	50.2	.....	Private.
15	.....	.....	.....	"
46.2	5-in. concr.	46.2	.....	"
142	.....	.....	.....	"
152.4	5-in. concr.	136.9	.....	"
106.2	.....	.....	.....	"
46.1	.....	.....	.....	"
21.2	.....	.....	.....	"
36.2	.....	.....	.....	"
20	.....	.....	.....	"
33	.....	.....	.....	"
125.5	.....	.....	.....	"
45.3	.....	.....	.....	"
96	.....	.....	.....	"
139	.....	.....	.....	"
113.9	.....	.....	.....	"
60.3	.....	.....	.....	"
143.2	.....	.....	.....	"
103.5	.....	.....	.....	"
120	5-in. concr.	120	.....	"
409.9	.....	.....	.....	"
107.3	.....	.....	.....	"
175.1	.....	.....	.....	"
65.4	.....	.....	.....	"
60.1	.....	.....	.....	"
226.8	5-in. concr.	226.8	.....	"
57.2	.....	.....	.....	"
21	.....	.....	.....	"
52.8	.....	.....	.....	"
109.2	.....	.....	.....	"
152.4	.....	.....	.....	"
28.4	.....	.....	.....	"
58.1	5-in. concr.	12	.....	"
44.7	"	44.7	.....	"

TABLE No. 8.

Class of Pavement.	Total sq. yds. in City.	Total miles in City.	Square yards laid in 1904.	Miles laid in 1904.	Year first laid.	Maximum grade of pavement. %	Guaranteed period of yrs.	Maximum cost per sq. yd., 1904. c r	Minimum cost per sq. yd., 1904. c r	Average cost per sq. yd., 1904. c r	Remarks.
Asphalt	924,604	52.10	87,930	6.34	1888	5.00	10	27 ¹⁶ ₁₀₀	15	27 ¹⁶ ₁₀₀	Heavy.
"	217,172	12.48	20,572	1.40	1893	4.80	5	183	153	165	Light.
Brick on concrete	15,031	.842	.....	.....	1899	.....	5	202	202	202	On 6 in. of concrete.
Brick on gravel	32,009	2.218	.....	.....	1896	.....	5	193	164	182	On 4 in. of concrete.
Cedar block	764,976	54.33	7,574	0.51	1881	4.63	5	.....	.....	.....	None laid in 1904.
" .....	.....	.....	.....	.....	1880	.....	1	.....	.....	.....	" .....
Gravel	76,862	5.83	.....	.....	1884	.....	5	75	72	73 ¹ ₂	Reconstruction.
*Scoria on granite	46,464	1.020	.....	.....	.....	.....	.....	80	80	80	On gravel foundation.
Macadam	702,773	54.56	26,445	1.94	.....	4.70	1	27	103	113	None laid in 1904.
" .....	.....	.....	.....	.....	.....	.....	1	1	90	80	"
Tar macadam	57,126	4.20	11,861	.82	1900	4.80	1	130	116 ¹ ₂	123	12 inches in depth.
Bitolithic	24,270	1.52	23,567	1.52	1904	4.71	10	1	16 ¹ ₂	1	"

* Street railway track allowance not included in total mileage.

† Exclusive of one lane which cost \$2.73 per square yard, due to exceptional difficulties of construction, weather conditions, and delayed delivery of brick.

TABLE No. 9.
GIVING MILEAGE OF CEMENT CONCRETE AND BRICK SIDEWALKS CONSTRUCTED IN
THE CITY OF TORONTO.

Year.	Cement Concrete.	Brick	Total.
Up to 1889.....	1.190	.....	1.190
1890.....	1.426	.....	1.426
1891.....	1.950	.....	1.950
1892.....	1.508	.....	1.508
1893.....	2.259	.....	2.259
1894.....	1.137	.....	1.137
1895.....	1.918	.....	1.918
1896.....	0.612	0.204	0.816
1897.....	1.050	0.820	1.870
1898.....	2.107	1.190	3.297
1899.....	5.470	0.290	5.760
1900.....	15.227	0.038	15.265
1901.....	17.305	0.511	17.816
1902.....	27.360	0.049	27.409
1903.....	34.896	0.093	34.989
1904.....	31.058	0.001	31.059
Totals	146.473	3.196	149.669

TABLE No. 10.
CONCRETE WALKS CONSTRUCTED BY DAY LABOR, 1904.

Street.	Side.	From	To	Width in feet.	Kind of Curbing Constructed with Walk.
Baldwin	S	Huron	Spadina	5	Concrete
Bathurst	W	King	Wellington	6 $\frac{5}{12}$	"
"	W	Wellington	Niagara	6 $\frac{5}{12}$	"
"	W	Niagara	Bridge	6	"
"	E	Wellington	Niagara	6 $\frac{5}{12}$	Concrete
"	E	Niagara	Front	6	"
Bernard	N	Walmer Rd	46 ft. west	5 $\frac{5}{12}$	Concrete
Bishop	N	Davenport Rd	292 ft. west	4	"
College	N	Opposite School of Practical Science		8	"
Collier	S	Park Rd	372 ft. east	4	"
Cottingham	S	Avenue Rd	Rathnally	5	"
"	S	592' e. of Avenue Rd	1,020' further east	5	"
Crescent Rd	S	Scarth Rd	178 ft. east	4	"
Earnbridge	S	Brock Ave	300 ft. east	4	"
"	N	"	300 ft. east	4	"
Euclid Ave	E	Ulster	Herrick	5	"
Glen Rd	W	Maple Ave	Elm Ave	5	"
"	E	163 $\frac{3}{4}$ ft. n. of Maple	"	5	"
Jarvis	E	Front	180 $\frac{1}{4}$ ft. north	12 $\frac{1}{2}$	6" concr.
Kendall	E	150 ft. s. of Dupont	Bernard Ave	5 $\frac{5}{12}$	Concrete
"	W	Bernard Ave	Wells	5 $\frac{5}{12}$	"
King	S	Simcoe	333' w. of John	8	"
"	S	John	333 ft. east	13	"
La Plante Ave	W	Gerrard	Hayter	4 $\frac{5}{12}$	Concrete
Lowther Ave	N	Madison Ave	Huron	5	"
"	N	Howland Ave	Albany Ave	6	"
Maple Ave	N	Glen Rd	175 ft. west	5 $\frac{5}{12}$	Concrete
Margueretta	E	Dundas	College	4	"
McAlpine	S	Davenport Rd	McMurrich	4 $\frac{5}{12}$	Concrete
Murray	W	Orde	116 $\frac{1}{2}$ ft. north	4 $\frac{5}{12}$	"
Peter	E	Adelaide	Richmond	6	"
Rathnally	W	MacPherson Ave	826 ft. north	5	"
Richmond	N	John	Duncan	6 $\frac{5}{12}$	Concrete
Salsbury	N	Sackville	105 $\frac{1}{2}$ ft. west	3 $\frac{11}{12}$	"
Shuter	S	Jarvis	George	5	"
Simcoe	W	King	Wellington	6	"
"	W	Wellington	Front	6 & 8	"
St. George	W	Lowther Ave	116 ft. south	6	"
Sussex	S	St. George	Huron	5	"
Treford Pl	S	Claremont	Bellwoods Ave	4 $\frac{5}{12}$	Concrete
Walmer Rd	W	Bernard	250 ft. north	5	"
Wilton Ave	S	Sumach	River	5 $\frac{5}{12}$	Concrete
"	S	Ontario	Seaton	6	"

TABLE No. 10.
CONCRETE WALKS CONSTRUCTED BY DAY LABOR, 1904.

City's Tender. Per lin. ft.	Next Lowest Tender. Per lin. ft.	Actual Cost of Work Includ- ed in Tender. Per lin. ft.	Cost of Work not Included in Tender.	Cost of Work Included in Tender.	Total Cost of Work Exclu- sive of Inter- est on Money.	Total Cost of Work Based on Contractors Lowest Tender	Difference Be- tween City's Cost and Next Lowest Con- tractor.	
							Gain	Loss.
% c.	% c.	% c.	% c.	% c.	% c.	% c.	% c.	% c.
None	None	68 $\frac{3}{10}$	48 40	295 54	343 94	None	No find'r	
"	"	90 $\frac{8}{10}$	70 24	392 29	462 53	"	"	
"	"	93 $\frac{9}{10}$	22 05	233 05	255 10	"	"	
"	"	61 $\frac{1}{10}$	11 63	279 90	291 53	"	"	
"	"	98 $\frac{8}{10}$	11 86	251 46	263 32	"	"	
"	"	54 $\frac{8}{10}$	5 34	219 75	225 09	"	"	
"	"	1 33	5 00	60 97	65 97	"	"	
57	59	48	23 52	141 67	165 19	174 10	32 43	
None	None	1 06	.....	588 63	588 63	None	No find'r	
55	59	53 $\frac{6}{10}$	26 22	175 44	201 66	192 93	17 49	
63	69	61 $\frac{1}{10}$	57 57	400 09	457 66	446 15	46 06	
None	None	67	23 81	683 47	707 28	None	No find'r	
"	"	67 $\frac{8}{10}$	.....	93 54	93 54	"	"	
"	"	44	1 90	138 61	140 51	"	"	
"	"	44	1 90	139 40	141 30	"	"	
"	"	.....	Not completed					
70	"	58 $\frac{8}{10}$	49 26	190 56	230 82	"	36 24	
71	73	64 $\frac{1}{10}$	.....	102 42	102 42	116 80	14 38	
None	None	S.F. 16 $\frac{2}{10}$	18 41	383 36	401 77	None	No find'r	
1 12	"	80 $\frac{4}{10}$	61 45	658 98	720 43	"	258 30	
1 12	"	91 $\frac{4}{10}$	7 91	222 14	230 05	"	50 02	
None	"	94 $\frac{5}{10}$	.....	588 89	588 89	"	No find'r	
18	"	.....	Not completed			"		
89	90	75 $\frac{8}{10}$	66 85	178 21	245 06	211 41	33 20	
74	75	66 $\frac{1}{10}$	9 39	180 01	189 40	204 22	24 21	
None	None	85 $\frac{9}{10}$	.....	277 94	277 94	None	No find'r	
"	"	97 $\frac{8}{10}$	3 00	181 58	184 58	"	"	
56	58	53	1 50	290 83	292 33	317 84	27 01	
95	97	83	107 99	293 98	401 97	343 38	49 40	
None	None	90 $\frac{5}{10}$	1 10	103 25	104 35	None	No find'r	
81	83	72 $\frac{8}{10}$	10 84	313 30	324 14	356 73	43 43	
68	70	59	87 55	459 61	547 16	545 30	85 69	
1 28	1 28 $\frac{1}{2}$	90 $\frac{8}{10}$	99 52	353 74	453 26	500 50	146 76	
None	None	68 $\frac{8}{10}$	6 74	81 91	88 65	None	No find'r	
67	68	59 $\frac{1}{10}$	19 44	147 82	167 26	170 00	22 18	
None	None	81 $\frac{2}{10}$	.....	365 67	365 67	None	No find'r	
"	"	45 $\frac{3}{10}$	3 60	249 46	253 06	"	"	
"	"	64 $\frac{3}{10}$	.....	81 30	81 30	"	"	
69	70	58	33 64	246 09	279 73	296 80	50 71	
98	99	94 $\frac{9}{10}$	40 39	259 09	299 48	270 07	10 98	
69	70	61 $\frac{1}{10}$	6 85	172 85	179 70	197 89	25 04	
1 08	1 09	95 $\frac{9}{10}$	148 86	579 94	728 80	658 90	78 96	
None	None	77 $\frac{4}{10}$	1 50	179 99	181 49	None	No find'r	
			1,086 23	11,236 73	12,322 96	5,003 02	1,052 49	

*Excavation and cinders not included.

TABLE No. 11.
PAVEMENTS CONSTRUCTED BY DAY LABOUR DURING 1904.

Street.	From.	To.	Class of Pavement.	Width in feet.	Length in feet.
Dav'np't Pl., n.s.	Dav'np't Rd.	530 ft. east ...	Concrete curb only.	5	522.0
Dorset	King	Wellington....	Brick	21.5	432.5
Earnbridge	Brock	300 ft. east....	3rd class mac'd'm..	24	300.0
Eastern.....	Pape	Caroline	"	24	732.0
Elliott	Broadview ..	Munroe	2nd class mac'd'm..	24	417.4
Gloucester	Church	Jarvis	Macadam reconst'n.	24	647.8
Lane 1st west of Church	Lombard ...	North & West.	Brick	8 to 15	190.0
Lane 1st south of Duchess	Ontario	426 ft. west ..	"	17	426.0
Lane 1st east of Yonge	Wellington..	South and east.	"	10 to 26	230.0
Leslie & Ivy Av. ....	.....	.....	Grading .....	.....	.....
Marlborough Pl.	Avenue Rd..	646 ft. east ...	3rd class mac'd'm..	14	646.0
Queen	Roncesvalles.	1,000 ft. west..	"	varying	1,000.0
Shannon, s.s. .	Ossington ..	Dovercourt....	Concrete curb only.	5	957.0
Sheridan Av. ...	Dundas	College	3rd class mac'd'm..	24	839.0
Shirley Av. ...	St. Clarens ..	Lansdowne...	Brick	20	365.3
Spadina Pl.	Cecil	280 ft. north ..	Concrete pavement.	17 to 40	280.0
Stafford.....	Wellington ..	Clifford	3rd class mac'd'm..	24	1,194.0
Victoria	King	Colborne	Asphalt block	29	217.0
Pacific Av.....	Atlantic	East and south.	Brick pavement....	24	893.0

TABLE No. 11.

PAVEMENTS CONSTRUCTED BY DAY LABOUR DURING 1904.

City's Tender.	Next Lowest Tender.	Cost of work not included in Tender.	Actual cost of work included in Tender.	Total cost of work exclusive of interest on money.	Total cost of work based on Contractor's lowest tender.	Difference between cost City's Tender and next lowest Tender.	
						Gain.	Loss.
£ c.	£ c.	£ c.	£ c.	£ c.	£ c.	£ c.	£ c.
	None.	2 40	175 11	177 51	None.	7 59	
2,475 00	2,598 00	91 35	2,156 35	2,247 70	2,689 35	441 65	
935 00	None.	116 77	849 07	965 84	None.	85 93	
2,109 00	2,476 00	110 99	1,897 72	2,008 71	2,586 99	578 28	
1,435 00	1,460 00	170 96	1,402 50	1,573 46	1,630 96	57 50	
950 00	1,100 00	117 39	701 52	818 91	1,217 39	398 48	
666 00	1,375 00	8 00	828 02	836 02	1,384 00	546 98	
2,100 00	2,150 00	24 87	2,003 04	2,027 91	2,174 87	146 96	
1,050 00	1,110 00	64 23	1,020 71	1,084 94	1,174 23	89 29	
1,125 00	None.	95 17	1,019 60	1,114 77	None.	105 40	
1,000 00	1,075 00	101 17	854 15	955 32	1,176 17	220 85	
1,600 00	None.	197 96	1,282 59	1,390 55	None.	317 41	
35	40	6 30	320 45	326 75	382 80	62 35	
2,900 00	None.	218 30	2,593 01	2,811 31	None.	306 99	
2,075 00	2,105 00	167 25	2,104 65	2,271 90	2,272 25	35	
1,050 00	1,254 00	105 20	888 06	993 26	1,359 20	365 94	
3,350 00	3,735 00	253 11	3,073 47	3,326 58	3,988 11	661 53	
2,595 00	3,063 00	385 15	1,962 71	2,347 86	3,448 15	1,100 29	
5,950 00	.....	.....	Not completed.				
		2,146 57	25,132 73	27,279 30	25,984 47	5,493 77	

TABLE No. 12.

WORKS CONSTRUCTED AS LOCAL IMPROVEMENTS FROM 1892 TO 1904 (INCLUSIVE.)

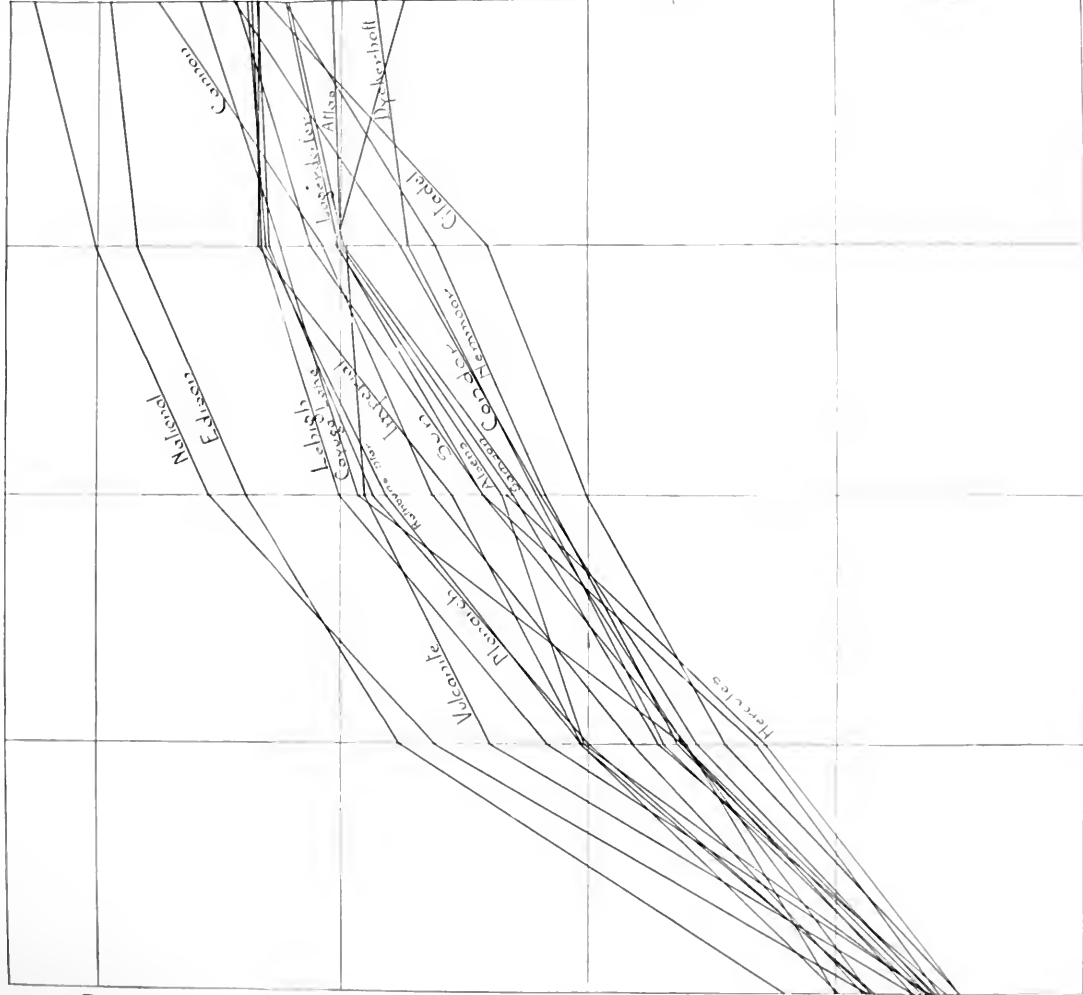
Class of Work.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	Total.
Asphalt pavements	9	7	7	4	3	4	14	28	27	25	24	26	33	211
Bitulithic													4	4
Brick				2	6	16	13	23	13	7	11	10	12	113
Gravel roadways						16		1	1					18
Cobble stone pavements.	5								1					6
Stone sett										1		1		2
Macadam roadways	1		1	4	5	3	13	24	14	16	24	14	14	133
Tar macadam roadways									1	1	6	12	8	28
Cedar block pavements ..	20	14	6	7	3	7	19	20	24	12	10	6	3	151
Concrete				3			1				1	2	1	8
Scoria block	1													1
Concrete and stone curb.										1	3	4	6	14
Wood curb										3	1	1		5
Concrete sidewalks	6	3	6	11	6	13	25	37	85	118	188	236	247	981
Brick					1	8	14	4	1	2	1		1	32
Stone flag	1	1												2
Grading													2	2
Totals	43	25	20	31	24	67	99	137	167	186	269	312	331	1,711

100

3 months 1 year

City Engineers Office
Toronto April 18th 1905

CEMENT TESTS



7 days

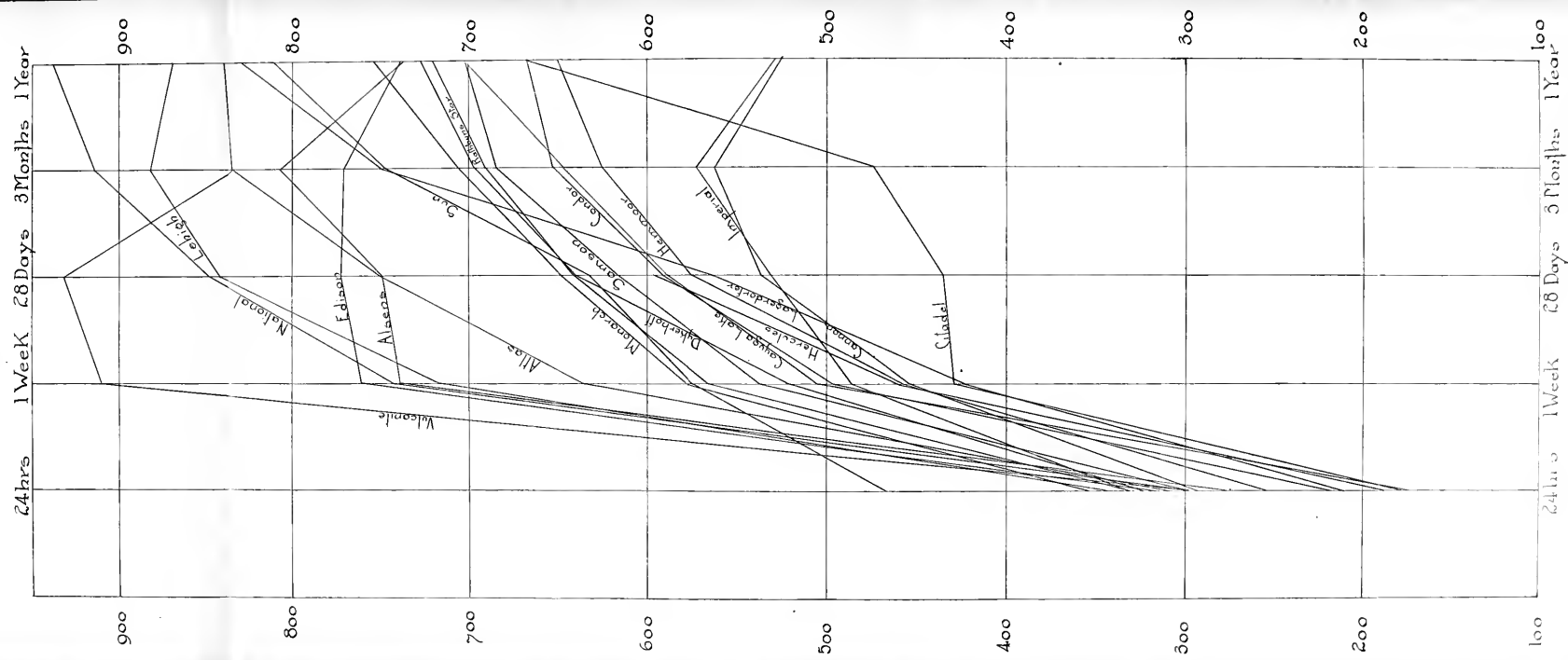
28 days

3 months

1 year

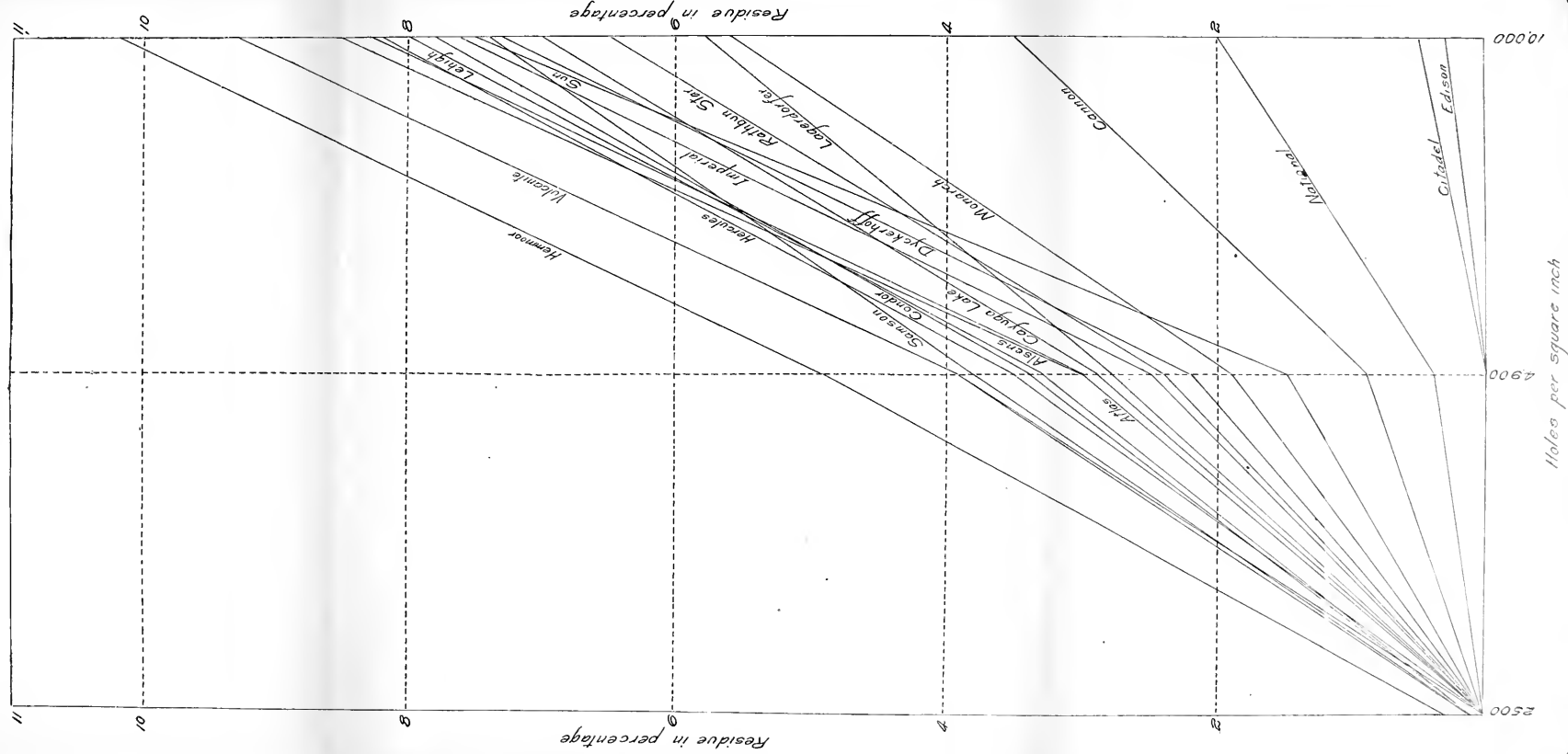
Engineers Office
Toronto April 18th 19

---NEAT CEMENT TESTS--- ---1904---



CEMENT SIFTINGS 1904

City Engineer's Office,
Toronto, May 2nd 1905.



SEWERS, DRAINS AND SPECIAL WORKS.

CITY ENGINEER'S DEPARTMENT.

Toronto, Dec. 31st. 1904.

MR. C. H. RUST,

City Engineer.

DEAR SIR,—Herewith I submit the Annual Report, showing in detail the work done under the supervision of this branch of the Engineer's Department.

During the year the following sewers were constructed :

	Lin. feet
9-inch tile pipe	273
12-inch tile pipe	7,376 6 in.
15-inch tile pipe	638 6 in.
15-inch tile pipe in concrete	3,820
18-inch tile pipe in concrete	187
Box drain, 2 ft. x 2 ft. 6 in.	233
Total	12,528

There are 240.31 miles of sewers in the City.

During the year there were

- 67 new manholes built.
- 107 manholes repaired.
- 450 new gullies built.
- 203 gullies repaired.
- 74 miles of sewers flushed and cleaned

There are 68 flush tanks in the City which are inspected every week.

GENERAL SEWER REPAIRS.

The repairing of the invert of the Rosedale Creek sewer, which has been carried on during the winter months of the past three or four years, was nearly completed: the weather last winter being colder and drier than usual, we were able to keep men almost continually engaged at the work.

The sewers on Eastern Avenue, near the Don River, and on Gerrard Street, near the Don, became choked, owing to the sluggish flow caused by the high level of the water in the lake, and had to be opened up, repaired and cleaned

STREET RAILWAY RECORDS

Once a month during the early part of the year, records were taken showing the actual car service provided by the Toronto Rail-

way Company on all the different routes in the City, for the purpose of ascertaining if the Company were carrying out the time-table recommended by the City Engineer.

On 11th April the new Street Railway time-table prepared and recommended by the City Engineer was adopted by the City Council, and since the 25th April, a daily record has been taken of the service provided by the Company.

PRIVATE DRAINS.

The following table shows the lineal feet of private drains constructed during the year:

Month.	6-in. ft.	9-in. ft.	12-in. ft.
January	537	33	....
February	667	39	....
March	2,047	132	....
April	3,590	174	....
May	3,455	402	....
June	3,541	284	33
July	3,684	173	33
August	4,190	120	....
September	4,966	177	....
October	4,868	524	....
November	3,370	322	....
December	1,679	132	....
Total	36,594	2,512	66

In addition to the above, 63 private drains were repaired and 48 flushed. The total length of private drains laid during the year was 39,172 lineal feet, and for 1903, 26,370 lineal feet, which is a good indication of how rapidly building operations have been increasing.

DREDGING SEWAGE DEPOSITS OUT OF SLIPS.

The sewage deposited in the following slips has been dredged out during the year:

Yonge Street sewer outlet
Church Street slip.
Jarvis Street slip.
Sherbourne Street slip.
Berkeley Street slip.
Queen's wharf channel.

The total quantity of material removed being 17,132 cubic yards.

RECORD OF CEMENT TESTS, JULY 1st, 1903, TO JULY 1st, 1904.

Brand.	No. of Samples Tested.		No. of Samples Rejected.		No. of Briquet's	Soundness.	Specific Gravity.	Residue in % on			Setting in Minutes.		Waterused in Mixing in %	Tensile Strength in Pounds per Square Inch.								Sulphuric Anhydride in %.	Remarks.				
	Moulded.	Broken.	No. 30 Sieve.	No. 70 Sieve.				No. 100 Sieve.	Initial.	Final.	Neat.	3 to 1.		Neat.				3 (sand) to 1 (cement)									
														24 Hours after Hard Set.	7 Days.	28 Days.	3 Months.	1 Year.	24 Hours after Hard Set.	7 Days.	28 Days.			3 Months.	1 Year.		
Alseps	1	0	20	20	O.K.	3.090	0.0	3.0	8.5	17.5	30.5	24.0	10.0	277	739	749	397	...	50	129	233	...	393	275	1.17	German.	
Atlas	16	1	220	206	O.K.	3.129	0.0	3.0	8.3	143	37.2	18.3	9.1	311	637	750	825	840	55	172	231	300	304	304	2.19	United States.	
Cannon	11	2	120	116	O.K.	2.970	0.0	0.9	3.5	76	269	25.4	10.0	293	454	536	562	525	89	182	264	308	376	376	2.19	German.	
Cayuga Lake	1	0	10	10	O.K.	3.010	0.0	2.9	7.0	120	300	20.0	10.0	173	505	589	647	702	60	162	293	326	369	369	1.60	United States.	
Citadel	1	0	20	20	O.K.	2.980	0.0	0.0	0.5	145	360	24.0	10.0	175	429	435	474	608	50	145	201	241	333	333
Condor	1	32	32	32	O.K.	3.033	0.1	3.4	7.8	125	347	23.8	10.0	219	497	591	653	668	61	151	219	276	345	345
Dyckerhoff	12	0	190	190	O.K.	3.135	0.0	2.2	7.3	131	349	23.3	10.0	324	521	640	697	721	68	170	221	274	287	287	1.51	Belgian.	
Edison	1	0	20	20	O.K.	3.210	0.0	0.0	0.3	100	360	24.0	10.0	318	761	772	771	739	121	277	339	384	396	396	1.20	German.	
Hennemor	14	2	170	166	O.K.	3.069	0.3	4.9	10.2	124	334	23.1	10.0	253	458	575	625	650	63	164	218	263	324	324
Hercules	2	0	20	20	O.K.	3.180	0.0	3.5	8.2	2	5	23.5	10.0	188	461	597	50	129	233	...	393	275
Imperial	4	4	40	40	75% failed	3.103	0.0	2.5	7.6	46	205	24.0	10.0	333	486	531	572	528	99	203	255	335	335	335	1.64	Canadian.	
Lagerdorfer	1	0	10	10	O.K.	2.990	0.0	2.8	5.8	160	340	25.0	10.0	210	424	564	750	829	58	132	243	302	324	324	1.76	German.	
Lehigh	80	0	1045	1027	O.K.	3.158	0.1	3.3	8.0	130	370	20.2	9.9	344	717	842	882	863	62	217	301	334	338	338	1.45	United States.	
Monarch	116	9	1475	1401	33% failed	3.128	0.0	1.9	5.6	144	324	24.2	10.0	356	578	649	706	754	85	290	287	330	336	336	1.51	Canadian.	
National	44	0	580	560	O.K.	3.150	0.0	0.4	2.0	132	342	21.3	10.0	300	744	848	914	938	86	262	354	401	427	427	1.48	Canadian.	
Rathbun's Star	104	2	1340	1246	1 failed	3.176	0.0	2.4	6.5	128	340	21.3	10.0	332	566	640	692	721	84	263	282	334	340	340	1.70	Canadian.	
Samsun	5	0	70	70	O.K.	3.068	0.1	3.8	7.4	157	293	22.0	10.0	300	538	617	685	702	69	162	225	299	323	323	1.60	Canadian.	
Sun	1	0	20	20	O.K.	3.100	0.0	1.5	7.5	105	280	19.0	9.5	467	575	633	743	811	100	161	243	313	345	345
Vulcanite	1	0	20	16	O.K.	3.170	0.0	3.9	9.3	205	620	21.0	10.0	298	910	932	833	...	69	240	291	298	298	298
	418	23	5422	5190																						United States.	



SURVEYS AND SOUNDINGS.

The survey of Toronto Bay, including soundings, which was commenced in 1903, was continued and completed during the winter of this year, the weather conditions being particularly favorable for the work, and a plan of the Harbor has since been prepared, giving most complete information.

TORONTO RAILWAY COMPANY'S CONDUITS.

Underground conduits were laid by the Toronto Railway Company from the power station on Davenport Road, just north of the C.P.R. tracks, along Davenport Road, Yonge Street, Bloor Street East, Sherbourne Street and Front Street to their power house. These conduits are to be used in conveying electrical power obtained from Niagara Falls, which will be utilized in operating the Street Railway System.

The work was commenced on 18th of July and completed 9th November.

TORONTO ELECTRIC LIGHT COMPANY'S CONDUITS.

Underground conduits were laid by the Toronto Electric Light Company on the following sections of streets:

Victoria Street, from King Street to Wilton Avenue.
Wilton Avenue, from Victoria Street to Yonge Street.
Yonge Street, from Wilton Avenue to Alice Street.
Alice Street, from Yonge Street to Teraulay Street.
Teraulay Street, from Alice Street to College Street.
St. George Street, from College Street to Russell Street.
Russell Street, from St. George Street to Huron Street.
Huron Street, from Russell Street to C.P.R. tracks.
Simcoe Street, from Front Street to King Street.
Queen Street, from Victoria Street to Yonge Street.
Front Street, from Yonge Street to Scott Street.
Defoe Street, from Shaw Street to Bathurst Street.
Adelaide Street, from Bathurst Street to Spadina Avenue.
Spadina Avenue, from King Street to Adelaide Street.

The work was commenced on 18th of April and completed 10th December.

BELL TELEPHONE COMPANY'S CONDUITS.

Underground conduits were laid by the Bell Telephone Company on the following sections of streets:

University Street, from east to west side, opposite Alexandra Palace.
Victoria Street, from Adelaide Street to King Street

Huron Street, from Bloor Street to Harbord Street.
Queen Street, from Close Street to Sorauren Avenue.
Yonge Street, from Bismark Avenue to Roxborough Avenue.
Toronto Street, from Adelaide Street to Court Street.
Court Street, from Toronto Street east.

This work was commenced on 27th April and completed 3rd December.

DAY LABOUR WORK.

During the year the construction of twelve sewers was carried out by day labour; for five of these the City Engineer's tender was the lowest submitted, in three cases the Engineer's tender was the only one received, and the remaining four were for different reasons laid by day labour without calling for tenders.

Table No. 2 is a list of these different sewers and shows their length, size, and also the amount of the City tender, the next lowest contractor's tender, the actual cost of the work, etc. The last two columns show the loss or gain to the City, when the actual cost is compared with the amount the work would have cost if the City Engineer had not tendered, and the contracts had been awarded to the contractor submitting the lowest tender: besides there would have been the additional cost of inspection, if the work had been done by contract.

All the sewers mentioned in Table No. 2 were constructed at a cost less than the amount of our estimates, and where tenders were submitted for less than the amount of the tender.

The sewer on Sterling Road has not yet been completed, so we cannot compare the cost with the lowest contractor's tender, but the cost of the four which we can compare shows a gain to the City of \$633.97.

Table No. 1 shows all the sewers constructed during the year.

Yours respectfully,

W. A. CLEMENT,

Assistant Engineer.

TABLE No. 1.

SHOWING SEWERS CONSTRUCTED DURING THE YEAR 1904.

Street.	From.	To.	Size.	Description.	Length in feet.	No. of Manholes.	No. of Gullies.	No. of P.D. Connects.	Average Depth.	Nature of Soil.	Inspector or Foreman.	Contractor.
Lee Ave.	Violet Ave.	a pt. 146 ft. south	2' x 2' 6"	8' x drain	146	1	1	1	3	Sand	R. Patterson	Day labor.
Violet Ave.	Lee Ave.	40 ft. east	2' x 2' 6"	Tile pipe	40	1	1	1	3	"	"	"
Birdie Ave.	Dundas	west City limit	12 in.	"	745	3	4	48	9	"	William Hill	John Maguire.
High Park Ave.	Roncesvalles Ave.	a pt. 218 ft. east	12 "	"	271	1	1	4	11	"	"	"
Regent	Dundas	497 ft. west	12 "	"	534	3	2	32	10	"	"	"
Sydney Ave.	Bloor	500 ft. south	12 "	"	529	3	2	32	9	Wet sand	"	"
Summerhill Ave.	a pt. 739 feet east of Yonge.	322 ft. fifth ave	12 "	"	322	1	1	24	10	Sand	"	"
Lane, n. Edward St.	Centre	Chestnut	9 "	"	273	1	1	14	8	Clay	"	"
Withrow Ave.	Logan Ave.	1105 ft. west	15 "	"	1138	4	6	88	11	Sand	"	"
Muir Ave.	Dufferin	Sheridan Ave.	12 "	"	520	3	3	35	11	"	R. Patterson	Day labor.
Dufferin	Lindsay Ave.	Sylvan Ave.	12 "	"	392	1	1	23	9	"	"	"
Cypress	Front	230 feet north	12 "	"	235	1	1	14	6	Made ground	"	"
Bonsford Ave.	Roncesvalles Ave.	500 feet west	12 x 15"	"	545	3	2	33	11	Sand	William Hill	John Maguire.
Hunter.	Jones Ave.	300 feet east	12 in.	"	340	2	2	20	11	Sand & Clay	"	"
Preston Ave.	Bloor	Northumberland	12 "	"	363	2	2	20	11	Clay	"	"
Wallace Ave.	Parth Ave.	170 feet west	12 "	"	204	2	2	10	13	Quicksand.	R. Patterson	Day labor.
Hallam Ave.	Preston Ave.	Delaware Ave.	12 "	"	803	1	2	4	50	Clay	A. McCormack	Godson Con. Co.
Conduit	Dundas	West City limit	12 "	"	332 ft. 6 in.	3	6	44	9	"	R. Patterson	Day labor.
Burnfield Ave.	Ossington Ave.	Slaw	15 "	"	320	1	2	20	9	Sand.	William Hill	John Maguire.
Chesley Ave.	Brook Ave.	East End	12 "	"	310	1	2	20	10	Clay.	R. Patterson	Day labor.
Gore	Clinton	West End	12 "	"	258 ft. 6 in.	3	2	14	10	"	"	"
Kintyre Ave.	Grant	218 ft. 10 in. west	12 "	"	1802	5	11	138	11	Clay & Sand	William Hill	John Maguire.
Gladstone Ave.	Sylvan Ave.	137 ft. s. of Bloor	15 "	"	577 ft. 6 in.	3	2	32	8	Clay	R. Patterson	Godson Con. Co.
Princess	Front	The Bay	12 "	Tile, from	376	3	3	11	9	"	"	Day labor.
Chestnut Park Rd.	Front	Downey's Lane	12 "	Tile pipe	187	2	1	4	8	"	"	"
Louisa	Teraulay	North End	18 "	"	600 feet com- pleted.	2	1	1	8	Running Sand	Geo. Parsons	"
Sterling Rd.	a pt. 284 ft. north of Dundas.		15 "	"								

TABLE No. 2.
SHOWING THE COST OF SEWERS CONSTRUCTED BY DAY LABOR DURING THE YEAR 1904.

Street.	From	To	Size.	Description.	Length. ft. in.	City's tender.	Next lowest tender.	Amount to be de- ducted from ten- der on account of work not car'd out.	Extra work not in- cluded in tender.	Total cost of work exclusive of in- terest on money.	Loss.	Gain.	Difference be- tween actual cost and lowest con- tractor's tender.
Dufferin St.	Lindsay Ave.	Sylvan Ave.	12 in.	Tile pipe	393	No tender.	No tender.			507 96			
Mun. Ave.	Dufferin St.	Sheridan Ave.	"	"	520	"	"			862 12			
Cypress St.	Front St.	230 ft. north.	"	"	255	\$320 00	\$335 00	18 74		295 65		20 61	
Wallace Ave.	Perth Ave.	170 ft. west.	"	"	204	478 00	594 00	11 00		424 58		161 42	
Hallam Ave.	Delaware Ave.	Preston Ave.	"	"	332	513 00	564 00	12 85		411 01		140 14	
Burnfield Ave.	Ossington Ave.	Shaw St.	15 in.	"	638	61 154 00	1 236 00	7 00		917 20		311 80	
Gore St.	Clinton St.	West end	12 "	"	310	517 00	No tender.	3 00		481 43			
Princess St.	Front St.	The Bay	"	Tile and iron pipe	577	13 00	"		60 00	1,344 58			
Christm Pk. Rd.	Extension		"	Tile pipe	376	No tender.	"			446 07			
Louisa St.	Terulay St.	Downey Lane	18 "	"	187	"	"			338 82			
Sterling Rd.			15 "	"		3,883 00	4,781 00	In prog.					
Lace Ave.	Violet Ave.	pt. 146 ft. s.	2 ft.	Box									
Violet Ave.	Lace Ave.	pt. 40 ft. e.	2' 6"	Drain		367 00	No tender.			309 00			
													623 97

BRIDGES, WHARVES, ETC.

CITY ENGINEER'S OFFICE,
Toronto, December 31st, 1904.

MR. C. H. RUST,
City Engineer.

DEAR SIR,—The following is a report of work done under the above heading during 1904:

WINCHESTER STREET BRIDGE.—The wearing course of planking on this bridge has been repaired where needed, also some portion of the hand-railing was found to be very much decayed: this was renewed where necessary. The bridge is showing signs of decay in the main trusses, the king bolt pulling into the timber; in the near future some very considerable repairs must be done, or the bridge rebuilt. New walings were put on the spring piles protecting the north side of the bridge, but some of these were torn off by the ice and will have to be renewed.

LAMB'S BRIDGE.—A new wearing course of planking has been put on this bridge: the small pair of bevel wheels on the turning gear has been twice broken, I suspect by someone wilfully dropping some hard substance between the teeth. These wheels have now been replaced by cast steel ones.

CHERRY STREET BRIDGE.—At the early part of the year this bridge was thoroughly overhauled, so as to ensure its being easily turned when the ice broke up; the centre crib had sunk somewhat on one side, so that the whole of the gear had to be jacked up and all bearings and wheels readjusted: as this bridge is only opened at that time, everything gets set. A new wearing course of planking was put on.

RIVERDALE PARK BRIDGE.—It was feared that this bridge would be endangered by the heavy ice expected to come down the river when it broke up, so it was raised about $3\frac{1}{2}$ feet and steps placed at each end: in the early summer the bridge was again lowered to its original position and the steps removed. It will be necessary

very shortly to do some considerable repairs to this bridge, and as the top and bottom chords are built up of 1 $\frac{3}{4}$ -inch boards and well nailed all over, it will be a very difficult matter to put in new pieces to replace those decayed.

GERRARD STREET BRIDGE.—On the river near this bridge in the early part of the year a little boy was drowned: in the endeavor to find the body the ice was blasted with dynamite. A large piece of ice struck the underside of the sidewalk, breaking some of the planks and damaging the hand-railing. These planks were replaced and the broken portion of the hand-railing repaired.

STRACHAN AVENUE BRIDGE.—Only some slight repairs have been done this season to the bents, but on examination I find that some considerable renewals to bents and undersills will have to be done in the coming spring. The G. T. Ry. have again added another track under the bridge and have removed one of the bents, but they have made compensation by inserting new and heavier stringers.

SHERBOURNE STREET BRIDGE.—This bridge has been thoroughly cleaned and painted. I found many parts very much corroded, especially in the horizontal tie girders to the trestle bents, the top member of which is a channel with its hollow part upwards, so that the water lies in it about 1 $\frac{1}{2}$ inches deep and has to dry only by evaporation. All corrosion as far as possible and all scale and loose paint was scraped off. The trestle bents with their bracing girders and the inside of the main trusses were painted with carbonizing coating manufactured by the Coheen Manufacturing Co., Canton, Ohio. The face of the main girders and hand-railing was painted with grey graphite paint. The sidewalks were repaired where necessary. The lamp pillars and lamps on the stone pilasters at each end of the bridge and at two other points on each side, were removed: the lamps were so much damaged as to be unsightly: in place of these were put suitable cast iron finials.

HUNTLEY STREET BRIDGE.—On this bridge an entirely new wearing course of 2-inch planks was placed and the sidewalks repaired where necessary.

GLEN ROAD BRIDGE.—On this bridge an entirely new wearing course of 2-inch planks was placed and the sidewalks repaired where necessary. At the north-east end the sidewalk was extended so as to connect with the crossing on Dale Avenue.

DUNDAS STREET BRIDGES.—Gutter beams of oak about 8 inches x 7 inches were put in the original construction, through which the drain pipes were placed. They were so far decayed that in several cases they broke through under the ordinary traffic; these have all been replaced and so reinforced around the drain pipes as to make them as strong there as in other parts.

CATTLE MARKET BRIDGE.—This bridge has been built now about 13 years and has not been painted or repaired during that time. When built an alley way was constructed about 4 feet wide all across the bridge to allow men to pass over without contact with the cattle. As this passage was never used, I have removed the iron post and wood fence and opened the bridge to its full width. The whole of the steelwork has been thoroughly cleaned and painted with carbonizing coating, the steelwork in very many places being so much corroded that it was impossible to scrape it down to a clean surface. The deck has been entirely renewed with both joists and planking, both sides of the bridge covered with matched boarding to $3\frac{1}{2}$ feet high from level of deck, all capped and painted. The ramps are in a very decayed state, but the Cattle Market people undertake repairs to them.

LAKE SHORE ROAD CULVERTS.—These culverts carrying the three streams under the Lake Shore Road are in a poor condition, and will require entire re-building in the near future; some of the supports have been repaired and new planking provided.

DUPONT STREET CULVERT.—This culvert has been very much shaken since the Street Railway has crossed it; some parts showed signs of collapsing inwards. I have had several stays and a waling put in on either side, so that it may last some time longer. I think it should be re-built in a year or so with concrete or a steel tube put across and filled up solidly.

CITY DOCKS AND WHARVES.—The Yonge Street wharf inside the freight sheds is in a very shaky condition and needs constant attention to prevent accidents; the roadway approaching this wharf has in many places been repaired, but I consider it a poor and expensive policy to have plank roadways leading to these sheds. The sidewalks leading to the new ferry wharf and the Bay Street wharf have been strengthened and repaired. The top planking for 350 feet on the west side and for 440 feet on the east side, has been

removed, the open space filled with brick rubbish, the joists have been relaid much closer together and are largely new, the deck planking has been renewed, graded towards the water and widened from 20 ft to 25 ft.

The Brock Street Wharf has had some slight repairs, but only such as to keep it safe for traffic. This wharf must have the whole deck renewed very shortly.

The wharf at Island Park was found to be in a very much decayed condition; the deck planking joists and bracing on the east and south sides have been renewed, the approaches improved and the adjustable landing repaired, the old lifting gear repaired and replaced. The west side of the wharf should have similar repairs during the coming season: the walings and sheeting at the north ends need renewal.

LIFE SAVING STATIONS.—All the various stations have been provided with the necessary appliances and some new stations added, all these have been regularly inspected and all the appliances, if broken or stolen, were immediately replaced. I think it will be necessary in the coming season to have these stations more frequently visited and any new device for life saving added that may be considered necessary. It would be a very good and useful thing if we had a patrol boat, that is a small gasoline launch to visit more frequently and rapidly each station, and also to watch those boats who do not carry the regulation lights, which in the past has been very dangerous to life.

FREE BATHING STATIONS.—The interest taken by the public in these stations continues and I think that more permanent buildings should be erected, so as to prevent the necessity of taking down and removal each year, especially at Fisherman's Island and the western sand bar. These bathing stations would be very much improved by so doing. The possibilities of Sunny Side station are very large, if suitable buildings were erected.

NEW BRIDGE AT YONGE STREET.—General and detail plans of this proposed bridge have been prepared, 17 in number, the complete specification also has been prepared and printed.

NEW ENGINE HOUSE MAIN PUMPING STATION.—Designs and all details of this building have been prepared.

DETAILS OF COST DURING SEASON 1904.

Name of Bridge.	Nails Etc.	Tools & Iron work.	Paint, Etc.	Sun- dries.	Lumber.	Labor.	Total.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Winchester St. Bridge	.....	.....	.....	.....	.....	41 40	41 40
Lamb's " "	.....	1 25	1 28	41 31	.....	180 60	224 44
Cherry St. " "	11 35	.....	.....	.....	179 60	450 75	641 70
Riverdale Park " "	.....	.....	.....	.....	.....	120 00	120 00
Gerrard St. " "	.....	.....	.....	.....	.....	11 95	11 95
Strachan Ave. " "	.....	.....	.....	.....	.....	20 50	20 50
Sherbourne St. " "	.....	.....	.....	.....	164 41	78 50	242 91
" " Paint	.....	.....	313 32	114 28	.....	1,171 68	1,599 28
Huntley St. Bridge	21 60	.....	.....	35	511 50	190 00	723 45
Glen Road " "	.....	.....	.....	.....	460 78	246 15	706 93
Dundas St. " "	.....	1 02	.....	.....	763 80	105 60	870 42
Cattle Market " "	15 80	.....	.....	.....	645 88	247 58	909 26
" " Paint	.....	.....	105 57	.....	.....	219 00	324 57
Culverts	.....	.....	.....	.....	124 22	98 05	222 27
New Yonge St. Bridge	.....	.....	.....	131 10	.....	.....	131 10
							6,790 18

DOCKS, WHARVES, LIFE SAVING AND FREE BATHING.

Yonge St. Wharf	59 45	50	.....	13 27	2,136 21	956 23	3,165 66
Block D " "	94 89	5 55	.....	.....	1,391 20	1,307 64	2,789 23
Centre Island Wharf	67 09	.....	.....	17 10	853 74	506 57	1,444 50
Life Saving Station	.....	1 75	.....	202 11	8 00	450 00	661 86
		Towing					
Free Bathing " "	960 00	6 69	60 50	34 75	1,037 80	2,099 74

Respectfully submitted,

JOHN WILLIAMS,

Assistant Engineer

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City Engineer's Office
Toronto, May 23, '05.

DIAGRAM SHEWING ASHES REMOVED, 1892-1904.

Loads of Ashes Removed



City Engineer's Office
Toronto, May 23, '05.

DIAGRAM SHEWING GARBAGE
COLLECTED, 1892-1904.

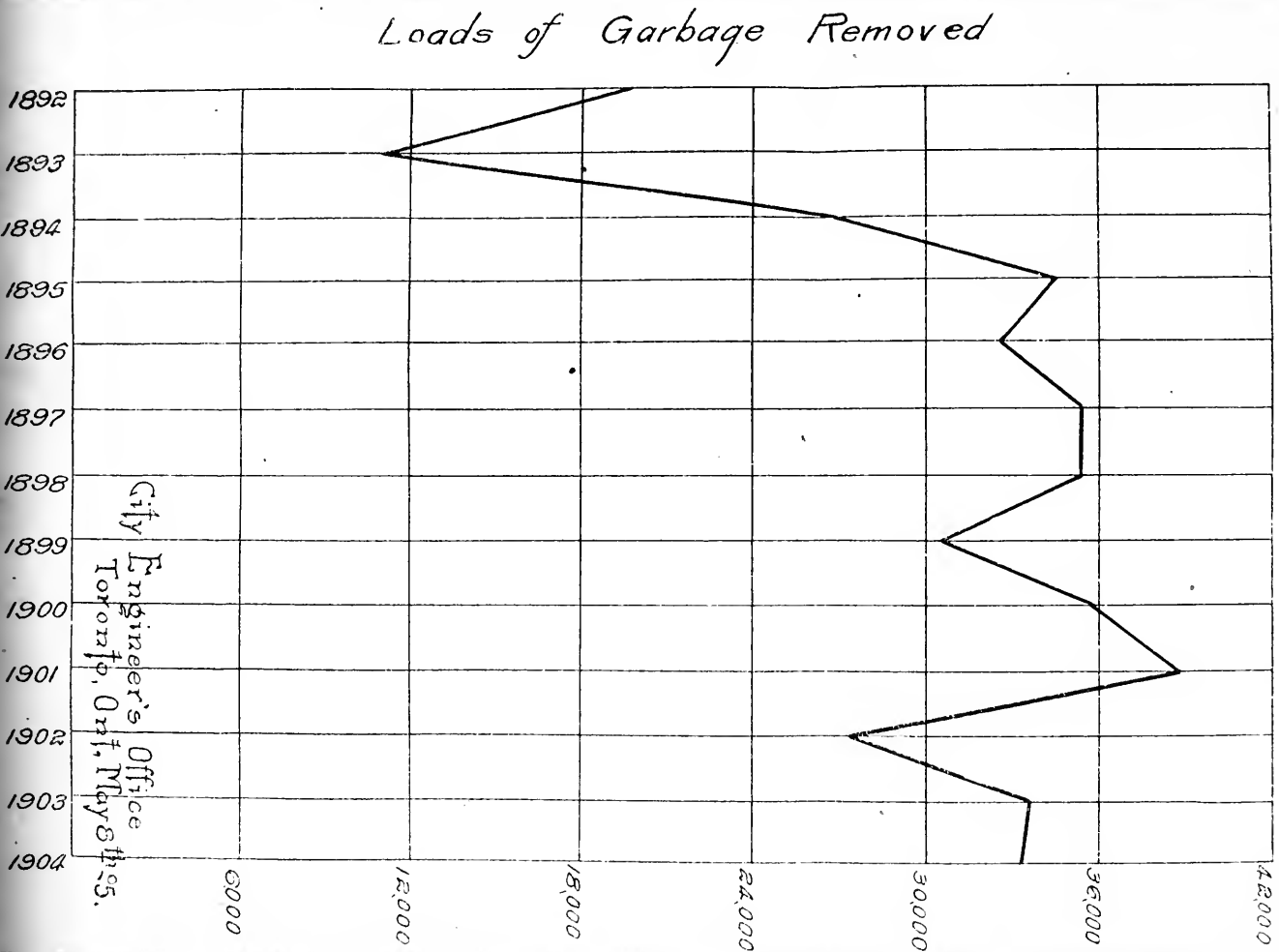
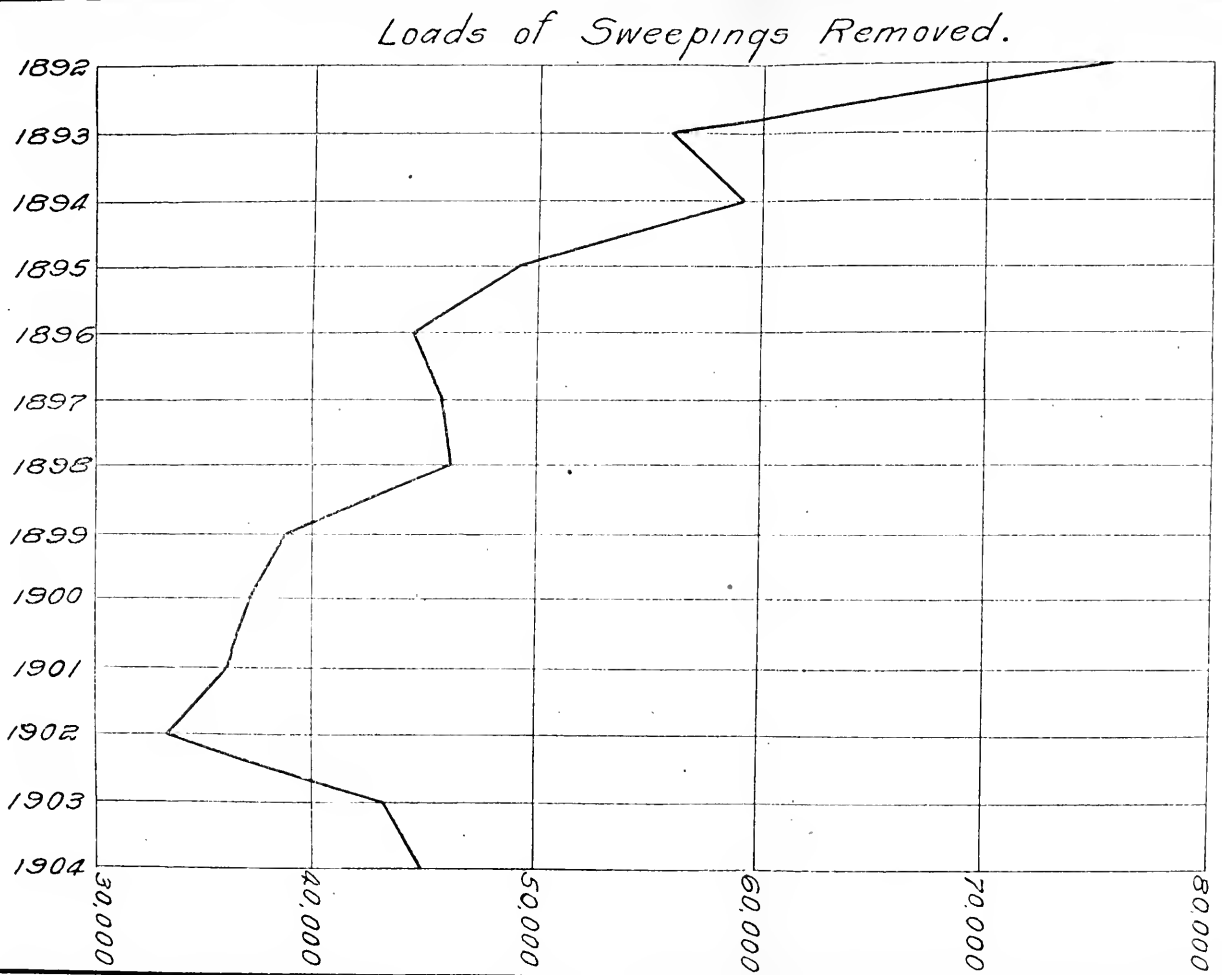


DIAGRAM SHEWING SWEEPINGS
REMOVED. 1892 - 1904.



REPORT OF STREET COMMISSIONER

Toronto, December 31st, 1904.

MR. C. H. RUST,
City Engineer.

DEAR SIR,—I beg to submit herewith a report of the works and services carried out under the supervision of this Department during the year ending December 31st, 1904.

ROADWAYS.

The movement on the part of property owners to secure a better class of pavements, to which I drew attention in my last Annual Report, happily continues. The constantly increasing mileage of improved streets means, of course, more work for this Department in the general supervision and maintenance, as well as cleaning and watering the pavements, and it follows, therefore, that the expenditure on roadway maintenance will be greater year by year.

Roadways have been customarily classed under the following headings, the expenditure on each class being kept under separate accounts :—Macadam, Local Improvement Macadam, Cedar Block, Stone, Gravel, Asphalt, Unimproved (General Road Repairs).

MACADAM.

This class comprises the old macadam roads which were constructed many years ago out of the general funds. These have been repaired as our appropriation would allow of. Many are about worn out.

LOCAL IMPROVEMENT MACADAM.

The pavements constructed as Local Improvements which have been re-surfaced, are given below, together with the cost of each.

Street.	From.	To.	Cost.
			\$ c.
Macpherson	Yonge	1,336 ft. west	511 55
St. Andrews	Spadina	Kensington	101 98
Albert	James	Teraulay	117 43
Teraulay	Queen	Albert	162 11
Front	George	Trinity	1,132 48
Queen	Greenwood	Kingston Rd	1,305 33
Spadina	Bridge	255 ft. south	157 38
Temperance	Bay	Yonge	286 70
Sheppard	Adelaide	Richmond	128 40
Caer Howell	McCaul	Avenue Rd.	262 37
John	King	600 ft. south	208 73
Brock	Dundas	Lindsay	191 78
Dufferin	Dundas	Lindsay	354 04
McKenzie Cr.	Dovercourt	Beaconsfield	189 43

The following is a list of macadam roads that have been repaired more or less, but not re-surfaced :

Street.	From.	To.	Cost.
			\$ c.
Grauge	Beverley	Spadina	6 97
Givens	Queen	Argyle	17 69
Atlantic	King	Liberty	18 81
Wilton	Sherbourne	Parliament	39 65
South Drive	Huntley	Glen	18 07
Scarth	South Drive	Crescent	9 56
Glen	Dale	Maple	19 93
Crescent	Scarth	South Drive	13 80
Jarvis	King	Queen	31 43
Parliament	Queen	Gerrard	49 65
Maple	Sherbourne	Glen	2 50
Crescent	Yonge	Park	7 68
Shuter	Yonge	Jarvis	7 68
Richmond	Bay	York	8 00
Davenport	Yonge	Avenue	11 34
Winchester	Sumach	Don Bridge	239 40

The cedar block and stone pavements have been repaired and maintained in the best possible condition as far as the appropriations would go.

GRAVEL.

The gravel roads which were constructed as Local Improvements, but as I pointed out in my report of last year, have been down much longer than their estimated lifetime of three years, have been repaired as shown below :

Street.	From.	To.	Cost.	
			s.	c.
Beaconsfield	Queen	Argyle	22	79
Brock	Dundas	Middleton	13	48
Dufferin	Dundas	Peel	22	50
Dunn	King	1,000 ft. south	64	53
Lisgar	Queen	Argyle	13	38
Melbourne	Dufferin	Elm Grove	40	17
Afton	Lisgar	Beaconsfield	11	59
O'Hara	Queen	Marion	27	17
Lansdowne	Marion	Union	19	60
Dovercourt	Queen	Dundas	50	20
Foxley	Dundas	Dovercourt	21	59
Crawford St. extension.	Montrose	Crawford	7	40

GENERAL ROAD REPAIRS. (UNIMPROVED ROADS.)

The work in connection with these streets consisted mainly of channelling and grading, together with a general supervision to keep them reasonably safe for traffic. The following is a list of those that were graded :—

Street.	From.	To.
Eastern Ave	Leslie	Queen.
Greenwood	Queen	G. T. Ry.
Dagmar	Brooklyn	Jones.
Leuty	Violet	South.
West Market	Esplanade	South End.
Amelia	Sumach	East.
Queen	Kingston Road	Woodbine.
Pape	Queen	Eastern.
Dearborn	Broadview	East End
Greenwood	Queen	Gerrard.
Eastern	Queen	Booth
Jarvis	Esplanade	South End
Bernard	Spadina	Walmer

LAKE SHORE ROAD.

The Lake Shore Road, from the railway crossing at Sunnyside, to the Humber River bridge, was re-surfaced—a much needed improvement, as the old roadway was clean worn through in many places. The repairs covered a width of 16 feet. Total cost was \$8,109.38. The storms of a south-easterly direction from the lake had done considerable damage to this road, undermining both it and the sidewalk in places for a considerable portion of its length, as far as the Humber Bridge. As a protection in future, a rubble stone wall and mattress groyne was constructed—the former commencing at a point 600 feet west of the west entrance of High Park, extending westerly 400 feet, from whence the mattress groyne was constructed an additional distance of 165 feet westerly to the west side of the Water Works Pumping Station (Toronto Junction). The cost of the protecting work was \$1,293.31. Replacing the sidewalk that had been undermined and washed away, cost 622.25.

It is very probable that the rubble wall referred to above will require to be extended easterly to the east entrance of High Park.

CARBOLIZED BLOCK PAVING.

As an experiment with a view to ascertain the wearing qualities of tamarac blocks, treated with the process of the United States Wood Preserving Company, of Perth Amboy, New Jersey, a portion of the stone sett pavement covering an area of 46 ft. x 14 ft., was taken up on the west side of Yonge Street from Front Street north, and replaced with the tamarac blocks, laid on the existing foundation, which, by the way, was not concrete. The cost was \$164.76.

BROADVIEW AVENUE AND GERRARD STREET INTERSECTION.

By Order of the City Council, the space between the car tracks and curb at the corners of Broadview and Gerrard Street was widened. Circular curbing was put in, and the fence at the north-west corner, at the gaol property, moved back to suit the new conditions. The work cost \$146.87.

DANFORTH AVENUE GRAVEL ROADWAY.

Funds were appropriated by Council to permit of Danforth Avenue being coated with gravel, extending from Broadview Avenue to a point 200 feet east of Greenwood Avenue. The gravel was put on to a depth of $\frac{4}{2}$ inches and covered a width of 12 feet of the road-

way. The cost of the work, including repairs to the bridge near Jones Avenue, was \$1,962.69. Work was continued as late in the season as the weather would permit, but it is my intention to go over it again next spring. It was found necessary to put a quantity of stone in one or two places near Jones Avenue which were very boggy.

CITY WHARF ROADWAY.

A roadway was constructed on the east side of the new City Freight Sheds, at the City Dock between Bay and York Streets, composed largely of brick rubbish available from the great fire of April last. While it is not what might be termed a first-class roadway, it will answer its purpose for some time to come, with a few repairs now and again. We have put on a coating of stone.

ANDERSON STREET OPENING.

A macadam street opening was constructed at the intersection of Anderson Street and Queen's Park Avenue, by order of the Committee on Works. Cost was \$229.64.

DUNDAS STREET BRIDGE APPROACHES.

Considerable work was done in connection with these approaches. The pavement had become practically worn out, and on account of the settlement of the banks, the sidewalks were very unsafe. New pavements of cedar blocks were laid, practically all the way from Lansdowne Avenue to Sorauren Avenue, together with new curbing, and 1,240 lineal feet of 6-foot wide sidewalk. Sufficient old material was secured from the old sidewalks to construct one of the sidewalks complete, which effected quite a saving. In accordance with your instructions, the fence at the Mallon property was reconstructed. Total cost of the work was \$3,981.78.

SIDEWALKS.

Plank sidewalks constructed as local improvements during the year were:

4 feet wide	11,902 lined feet.
5½ " "	5,699 " "
6 " "	525 " "

In the matter of repairs to plank sidewalks, we have done the very best we could with the small fund allowed us. I must emphasize what I have said over and over again in former reports, namely,

that the appropriation annually made for sidewalk repairs and maintenance is totally inadequate for the purpose. I have prepared a list of plank sidewalks that require renewal. I regret that many of those on the list I prepared last spring have not been renewed. It is needless to say that their condition has not improved during the intervening months. The property owners are responsible in some instances, having petitioned against the recommendations.

A list of all the sidewalks constructed as Local Improvements during the year is appended hereto.

Several short sections of running plank walks have been constructed by order of the Committee on Works, at the general expense.

SIDEWALK EXTENSIONS.

The sum of \$356.85 was received and paid over to the City Treasurer for short extensions of plank sidewalk constructed at the request of various residents and property owners.

On Miscellaneous Account we received and paid to the Treasurer the sum of \$1,068.77.

STREET OPENING PERMITS.

Street opening permits to the number of 23 were issued to contractors, builders, etc., who paid over the usual deposit of \$10 pending the proper restoration of the sidewalks.

REMOVAL OF SNOW FROM SIDEWALKS.

During the winter of 1903-04 snow was removed from 1,911,456 lineal feet of sidewalks, representing 362 miles, at a cost of $5\frac{3}{4}$ mills per foot frontage, per cleaning, which was assessed against the properties cleaned. This service affords considerable employment to many men who would otherwise be idle during the winter season. The following is a detailed statement of the work for last winter:

Ward	Miles Cleaned.	Feet.	Cost.
1	60	2,279	\$1,837 75
2	26	2,502	800 80
3	15	1,212	463 31
4	35	4,028	1,088 74
5	89	389	2,710 54
6	135	246	4,107 26
	<hr/> 362	<hr/> 96	<hr/> \$11,008 40

The following statement shows the miles cleaned and cost each winter since the service was begun in 1890-91 :

Year.	Miles Cleaned.	Rate per Foot Frontage.
1890-91	21	1 $\frac{1}{2}$ cts.
1891-92	199	0 $\frac{1}{3}$ "
1892-93	299	0 $\frac{1}{2}$ "
1893-94	284	0 $\frac{5}{9}$ "
1894-95	346	0 $\frac{2}{5}$ "
1895-96	536	4 $\frac{1}{10}$ mills.
1896-97	203 $\frac{1}{2}$	3 "
1897-98	289	3 $\frac{1}{2}$ "
1898-99	275	3 "
1899-00	440	3 $\frac{1}{2}$ "
1900-01	368	3 $\frac{1}{2}$ "
1901-02	312	4 "
1902-03	435	3 "
1903-04	362	5 $\frac{3}{4}$ "

STREET CROSSINGS.

A considerable number of permanent crossings of scoria blocks have been laid. The scoria blocks were old ones, culled from various works. I regret that we have only a very few remaining on hand for the further construction of crossings next year. This policy should be continued, as scoria crossings are clean, and in every other way admirable.

Plank crossings have been maintained in as good order as possible. The expenditure under this head was \$2,622.08.

The following is a list of the permanent crossings constructed, with the dimensions of each:

CROSSINGS.

PERMANENT SCORIA BLOCK CROSSINGS CONSTRUCTED, 1904.

Street.	Line With.	Street.	Size.
Across Teraulay	Line with	S. s. Buchanan ..	36 x 5
" Teraulay	"	S. s. Hayter	31½ x 5
" Teraulay	"	N. s. Hayter	31½ x 5
" Grange	"	E. s. Huron	24 x 6
" Grange	"	E. s. Hackney	24 x 5
" Front	"	E. s. Water	24 x 5
" Front	"	W. s. Water	24 x 5
" Front	"	E. s. Vine	31 x 5
" Eastern	"	E. s. Cherry	24 x 5
" Eastern	"	W. s. Cherry	24 x 5
" Front	"	W. s. Portland ..	30 x 4½
" Front	"	E. s. Draper	30 x 4½
" Front	"	W. s. Spadina	30 x 4½
" Front	"	W. s. Peter	28 x 4½
" Windsor	"	N. s. Front	27 x 4½
" Birch	"	W. s. Yonge	24 x 5
" University	"	N. s. Anderson ..	20 x 5
" Windsor	"	S. s. Wellington ..	26 x 5
" Bathurst	"	N. s. Farley	44 x 5
" Agnes	"	W. s. Chestnut ..	30 x 5
" Christopher	"	E. s. University ..	30 x 5
" Dovercourt	"	S. s. Foxley	30 x 5
" Gould	"	N. s. Dalhousie ..	30 x 5
" Dalhousie	"	S. s. Gould	30 x 5
" Dalhousie	"	N. s. Gould	30 x 5
" Smach	"	S. s. Gerrard	30 x 5
" Florence	"	E. s. Brock	32 x 4½
" Simcoe	"	S. s. Front	111 x 5½
" Gerrard	"	E. S. Seaton	32 x 5
" Gerrard	"	W. s. Seaton	32 x 5
" Seaton	"	N. s. Gerrard	23 x 5
" Seaton	"	S. s. Gerrard	23 x 5
" Lane on Shuter ..	Between Jarvis and Mutual ..	.....	12 x 5
" King	Just west of American Life ..	Building	12 x 10
" Elm	Opposite Methodist Church ..	.....	30 x 5
" N. S. King	Just west of Manning Ar ..	.....	12 x 10
" S. S. Yorkville ..	Last lane west of Yonge St. ..	.....	12 x 10
" At University and Armony Streets ..	.....	.....	24 x 5

CURBING.

Our small appropriation has not permitted of very extensive repairs to curbing. In many places the stone curb has had to be reset, in some cases to a limited extent only, and in others considerable.

The expenditure on repairs of all kinds, together with some renewal of wood curbing, totalled \$737.36.

WEED CUTTING.

The cutting down of noxious weeds in some of the outlying sections of the City has come to be a task of no small magnitude. Sweet clover has flourished to an amazing extent, and being of rapid growth, it has been necessary to attend to it promptly before the seed was scattered. The expenditure was \$996 64.

HOUSE OF INDUSTRY STONE.

Stone amounting to about 100 toise was provided for the authorities of the House of Industry during the winter of 1903-4, required for those seeking temporary accommodation at that institution, as a labor test, each applicant having to break a specified quantity in return for his meals and lodging. The expense attached to sledging, and the measuring, etc. of this stone, was \$501.78.

I must point out that it is getting more and more difficult to obtain the stone required at this institution. The trouble is in connection with the delivery. We can get stone delivered at our dock, but it has then to be teamed, which adds to the cost immensely. Of course, it is of great advantage to the House of Industry authorities to have the stone supplied, as from what I can learn, it is the means of preventing the influx of many professional mendicants and tramps into the City each winter, but I desire to show that the cost of the stone is likely to increase year by year.

DOG-TRAPPING.

The operations in connection with trapping stray dogs were continued off and on from June 29th to August 25th. The following is a detailed statement of the service :

	Dogs.	Bitches.
Caught by trappers.....	140	22
Received at the Pound	2	
	<hr/> 142	<hr/> 22
Released on payment of fine	23	3
Released on production of licenses	23	
Destroyed ..	92	19
Escaped.....	4	
	<hr/> 142	<hr/> 22

Amount collected in fines, and paid to City Treasurer, \$61.

PUBLIC CONVENIENCES.

The public conveniences located at St. Andrew's Market, Queen Street, opposite Dundas Street, Queen and King Streets Junction at Roncesvalles Avenue, and St. Lawrence Market, have received almost daily attention, with the object of keeping them in a clean and sanitary condition. The outside of each has been painted, thereby improving their appearance very materially. A new concrete floor has been constructed in the one at St. Andrew's Market. I propose utilizing the appropriation next year in disinfecting each convenience two or three times per week, and painting them as occasion requires. It might not be out of place to mention that we have not had a single complaint about any one of them during the entire year.

EXPRESSMEN AND CABMEN'S SHELTERS.

These are located as under :

- Jarvis Street, between Queen and Richmond Streets.
- Lombard Street, east of Victoria Street.
- Richmond, west of Yonge Street.
- Station Street.
- Esther Street, south of Queen Street.
- Markham Street, north of Queen Street.

All have been thoroughly overhauled, repaired, and painted inside and out. The shelters are much appreciated by the men who use them. It is to be hoped that the appropriation for keeping them in proper order will be continued. Not a single complaint either from the police or the public at large has been received about the appearance or condition, etc., of these shelters. I may add that I have written to the men, asking their assistance and co-operation in keeping the structures clean and creditable looking.

STREET WATERING.

The trolley sprinklers, four in number, belonging to the Toronto Railway Co., covered during the season 22,418 miles, for which the City paid at the rate of 16½ cents per mile of double track, amounting to \$3,647.80 for the season. The following is a detailed statement of the service :

No. 1 Sprinkler (capacity 2,500 gallons), commenced May 5th,	
taken off Sept. 12th. Disposed of 2,612 loads of water,	
representing	6,530,000 gallons
Mileage, 4,711.	

No. 2 Sprinkler (capacity 2,800 gallons), commenced May 3rd, taken off Oct. 15th. Disposed of 3,028 loads of water, representing 8,478,400 gallons Mileage, 6,614.
No. 3 Sprinkler (capacity 2,800 gallons), commenced May 4th, taken off Oct. 7th. Disposed of 2,836 loads of water, representing 7,630,000 gallons Mileage, 4,846.
No. 4 Sprinkler (capacity 4,000 gallons), commenced May 3rd, taken off Nov. 23rd. Disposed of 1,463 loads of water, representing 5,852,000 gallons
28,490,400 gallons

The water disposed of by the ordinary sprinkling by team wagons totalled 27,151,500 gallons, representing 54,303 loads of 500 gallons each.

Altogether the watering service consumed the following quantity of water:

	Loads.	Gallons.
Trolley	9,939	28,490,400
Wagons	54,303	27,151,500
Total	64,242	55,641,900

For the purpose of record I submit below a complete statement of the details of the Street Watering service since 1892, the year it was transferred to my department, and including the trolley watering service since its introduction in 1894, a fourth trolley sprinkler having been put in commission in 1903:

Year.	Trolley Watering.		Water Wagons.	Total Number of Gallons.
	Mileage.	Gallons.	Gallons.	
1892	.....	.....	62,167,070	62,167,070
1893	.....	.....	5,922,500	5,922,500
1894	12,138	5,266,150	49,862,000	55,128,150
1895	14,189	18,766,300	41,823,500	60,589,800
1896	18,372	22,211,500	52,026,900	74,237,500
1897	18,591	23,895,700	37,945,375	60,941,075
1898	20,021	28,048,600	55,930,200	83,978,800
1899	19,048	28,845,800	52,641,000	81,486,800
1900	20,324	31,285,000	55,619,000	86,904,000
1901	18,744	28,910,100	36,928,500	65,838,600
1902	17,145	26,875,200	31,492,000	58,367,200
1903	25,992	34,771,100	42,439,650	77,210,750
1904	22,452	28,490,400	27,151,500	55,641,900

Total expenditure was \$33,406.20, including \$10,000 for water.

STREET CLEANING.

Total mileage of streets cleaned was 1,682 miles. Number of loads collected was 44,842. Expenditure was \$42,025.37.

The street cleaning service was transferred to this department in 1890, and the following table shows the miles cleaned, and loads collected each year since then up to the present:

Year.	Miles (lineal)	Loads.
1890	1,366	100,000
1891	1,925	85,000
1892	2,032	75,680
1893	1,302	155,988
1894	1,434	59,172
1895	1,636	49,286
1896	1,886	44,806
1897	1,866 $\frac{1}{2}$	45,921
1898	1,849	46,216
1899	1,730	38,880
1900	1,767 $\frac{1}{2}$	37,163
1901	1,515	36,099
1902	1,597	33,482
1903	2,157	43,236
1904	1,682	44,842

It will be noticed that the number of loads removed shows a gradual decrease. This is due to the fact of the constantly increasing mileage of improved streets, the patrol system covering many miles of streets that were formerly cleaned regularly with the horse brooms.

The difficulty experienced in connection with disposing of the street sweepings last year, has not abated to any appreciable extent, convenient dumps being hard to secure. A departure has been made this year in the direction of conveying a portion of the collections by means of two scows, over to the Island, which are there unloaded by the Park Commissioner's men, and the sweepings used for filling, etc. I propose next year introducing an item in the estimates to provide for the construction of a ramp for the loading of these scows. If this is granted we shall be able to send a considerable quantity of street sweepings to the Island at a considerable saving, owing to the shorter haul and convenient loading places.

As regards matters pertaining generally to the streets, I might mention that we are seeking the co-operation of the police in an effort to abolish, or mitigate the nuisance of waste paper scattered about, the bulk of which comes from the lanes, where it is deposited by householders for removal by the scavengers. This would be all right

if the people could only be induced to make a practice of tying the paper securely in bundles ; but in most cases it is left in loose heaps, and of course, is soon scattered. A considerable number of persons have been summoned before the Police Magistrate for this offence, which will no doubt have a deterrent effect on others.

A second matter to which I wish to draw attention is the dirt and inconvenience arising from the large number of openings made in the asphalt pavements for various services (gas, water, private drains, etc.) during the late fall, or early spring, which in many instances are not restored for a considerable length of time. The result is, the dirt is tracked upon the surrounding pavement constantly, and the streets wear a very dirty, untidy look. If some arrangement could be made for restoring the pavements more promptly, it would be of great benefit.

In regard to obstructions of various kinds on the streets, these have not been so numerous as in former years, nevertheless we have found it necessary to summon a number of persons for illegally depositing building materials, etc., upon public property.

STREET CLEANING, SNOW.

The expenditure during the winter of 1904 under this head was \$25,024.22, sub-divided as follows :

Removing snow from streets whereon the tracks of the Toronto Railway Company are laid, for which the above Company paid one-third of the cost	\$ 12,281 13
City's proportion.....	\$8,187 42
Company's proportion	4,093 71
Cost of removing snow from bridges, wings of sidewalks and streets other than those on which tracks are laid.....	\$ 12,743 09
	<hr/>
	\$ 25,024 22

Total number of loads removed was 49,269, of which 14,845 were team loads, and 34,424 were cart loads.

I do not know of anything more to add concerning this service except it be to recommend that the existing agreement between the City and the Toronto Railway Co., as to the proportion of the cost of removing surplus snow, borne by the latter, be discontinued, as I am strongly of the opinion that the Company does not contribute a fair

share of the cost. If it be thought desirable to draft a new agreement with the Company, provision should be made therein for a much larger share from them than one-third, as at present.

PATROL CLEANING.

The expenditure on the asphalt patrol system was \$28,157.10. It was commenced on April 6th, and discontinued November 7th. The work of the uniformed brigade employed in this service speaks for itself in the clean and tidy appearance of the many miles of asphalt pavements laid on the main thoroughfares, and in the downtown section. In order to have a record of the respective beats covered by the patrol men, I submit herewith a statement of the same:

LIST OF ASPHALT BEATS 1905.

Street.	From	To
King.....	Armour.....	Bathurst.
".....	Bathurst.....	Spadina.
".....	Spadina.....	Widmer.
".....	Widmer.....	Simcoe.
".....	Bay.....	Simcoe.
".....	York.....	Bay.
York.....	Queen.....	King.
King.....	York.....	Simcoe.
York.....	King.....	Front.
Wellington.....	Bay.....	Simcoe.
Simcoe.....	Wellington.....	Front.
Station.....	York.....	Simcoe.
Front.....	Simcoe.....	York.
Front.....	York.....	Bay.
Bay.....	Front.....	Wellington.
Jordan.....	Wellington.....	King.
Melinda.....	Yonge.....	Bay.
Bay.....	Wellington.....	King.
Bay.....	King.....	Adelaide.
Adelaide.....	Yonge.....	Bay.
Bay.....	Adelaide.....	Queen.
Richmond.....	Yonge.....	Bay.
Louisa.....	".....	Teraulay.
Albert.....	".....	James.
James.....	Louisa.....	Queen.
Queen.....	Yonge.....	University.
".....	University.....	Soho.
".....	Soho.....	Cameron.
".....	Cameron.....	Bathurst.

LIST OF ASPHALT BEATS, 1905—*Continued.*

Street.	From	To
Queen	Bathurst.....	Niagara.
Bathurst	Queen.....	College.
College	Bathurst.....	Robert.
“	Robert	Beverley.
“	Beverley.....	Yonge.
Avenue Road.....	Bloor	Davenport.
Spadina, e.s.	College.....	St. Patrick.
Spadina, w.s.	“	“
Spadina, h.s.	Queen.....	“
Adelaide	Spadina.....	John.
“	John.....	York.
Simcoe.....	Queen.....	King.
Pearl	Simcoe.....	York.
Yonge	Esplanade.....	King.
“	King.....	Queen.
“	Queen.....	Alice.
“	Alice.....	Walton.
“	Walton	College.
“	College.....	Wellesley.
“	Wellesley.....	Charles.
“	Charles.....	Davenport.
King.....	Bay.....	Victoria.
“	Victoria.....	West Market.
“	West Market	Frederick.
“	Frederick.....	Berkeley.
Queen	Yonge.....	Mutual.
“	Mutual	Sherbourne.
“	Sherbourne	Power.
“	Power.....	River.
Church	King.....	Queen.
“	Queen.....	Normal School gate.
“	Normal School Gate.....	Maitland.
“	Maitland.....	Bloor.
Bloor	Yonge.....	Sherbourne
Jarvis	Queen.....	Gerrard.
“	Gerrard	Maitland.
“	Maitland	Bloor.
Carlton.....	Yonge.....	Homewood.
“	Homewood.....	Parliament.
Front.....	Church.....	Yonge.
Wellington	Scott.....	“
Scott	Colborne	Front.
Colborne.....	Yonge.....	Church.
Church	King	Front.

LIST OF ASPHALT BEATS, 1905—*Continued.*

Street.	From	To
Queen	Don.....	Broadview.
"	Broadview	G.T.R. Crossing.
Adelaide	Jarvis.....	Toronto.
Toronto.....	Adelaide.....	King.
Adelaide	Toronto.....	Yonge.
Victoria	King.....	Queen.
Richmond.. ..	Yonge.....	Victoria.

STREET FLUSHING.

Funds having been voted by Council to defray the cost of flushing certain of the main streets that are asphalt paved, the system was put in operation early in the season. The flushing was done at night, and the benefit was soon apparent in the removal of the fine dust that has been such a fruitful source of complaints. Amount expended during the season \$10,894.40.

SCAVENGING.

I have prepared a chart showing the collections of ashes and garbage from the year 1892, when the service was placed under my supervision, up to and including 1904; the collections for the latter year being, as you will notice:

Ashes	154,767
Garbage	33,361
Total.....	188,128

Total expenditure was \$105,608.63. The average cost per load for removal of the refuse was 56 cents, which makes \$86,839.76 as the cost of removing the ashes, and \$18,718.35 as the cost of removing the garbage.

There has been considerable discussion recently as to the cost of the scavenging service in Toronto, compared with the cost in some of the principal American cities. It should not be forgotten, however, that the policy generally adopted in cities in the United States is to remove garbage only, householders having to make their own arrangements for the removal of ashes. A further explanation is necessary as to the class of materials termed "garbage." In some of the cities just referred to, garbage is applied exclusively to kitchen or table waste, while in Toronto it covers, in addition to kitchen waste, all materials of a combustible nature such as waste paper,

sweepings from stores, etc., manufacturer's waste, old mattresses, dead animals, etc. I am fully convinced that if the same classification was made here as is done in most of the American cities and towns, the garbage so-called would be diminished fully 50 per cent., which would reduce the cost of the service at least \$10,000, that is, figured out on the average cost per load collected, as mentioned above. Owing to the different method of conducting the scavenging service in the States, every municipality almost having some feature of its own, it is simply impossible to make an accurate comparison between the expenditure there and in Toronto. It is indeed questionable whether any city on the continent gives as complete and comprehensive scavenging service as we do. Certainly, it may be affirmed without the least fear of successful contradiction, that no city in America gives its inhabitants as good value for the money expended in proportion as Toronto does, where the conditions are at all similar. In the discussions concerning this service, it frequently happens that the long haul we have to contend with, owing to the scarcity of dumps, is quite overlooked, although I have dealt with that phase of the question repeatedly in reports, pointing out various ways whereby the cost of transportation could be lessened, by utilizing the trolley system, etc., and the erection of additional Destructors.

In conclusion, I might add that we are endeavoring to educate the citizens to a stricter observance of the regulations of the service, such as the separation and storage of the waste in proper receptacles until called for by the scavengers, instead of throwing it broadcast over the lanes and alleys, tying waste paper securely in bundles, etc., etc. In this connection we have found it necessary to issue summonses against over 100 persons for various infractions of the By-law, most of whom were fined.

WESTERN GARBAGE DESTRUCTOR.

The quantities of refuse materials destroyed at the above was as under, at an expenditure of \$10,441.30:

Garbage and refuse	20,587 loads.
Cats	1,085
Dogs	960
Fowl	1,095
Fish	99 barrels
Fish	304 boxes

Eggs	92 barrels
Eggs	103 cases
Mattresses	1,999
Meat.....	22 boxes
Goats	2
Meat.....	8 carcasses

This destructor is the best on the continent for the class of materials that have to be disposed of, and it has done most excellent service since its erection. Some overhauling is now required to it, and funds will be asked for that purpose in the Estimates next year.

I may add that I have given considerable attention to destructors of various patterns for disposing of garbage, and also to plants for what is styled the Reduction Process, and the conclusion I have arrived at is that the latter is not a success. In some of the large cities in the United States where formerly Reduction plants were in operation, and which were destroyed by fire, the authorities have not apparently deemed it advisable to rebuild them. The best method so far discovered of disposing of waste materials that are combustible is by properly constructed Destructors.

TORONTO ISLAND.

The supervision of the services on the Island is vested in my department. The scavenging service was commenced on May 9th, and discontinued on October 7th. A semi-weekly collection was given over all sections of the Island. The service includes the removal of night-soil from all out-houses. All the refuse collected, including night-soil, is consumed in the Destructor erected on the Island. If the collections continue to increase as of late, a Destructor of larger capacity will have to be provided. The present one requires considerable repairs, which I am arranging to have done before the next season opens. I have arranged also for the man who has charge of the Destructor (which is operated at night-time), to live on the Island, and to that end a small cottage was provided for him. The operation of the Destructor at night-time removes any ground of complaint that might otherwise be made by some of the residents in the adjacent locality. It also enables the man in charge to keep an eye on the plant and the stables in which the horses are kept, and see that no damage is done.

The sidewalks, bicycle path, and the streets generally, have been

repaired and maintained to the best possible limit the appropriations would allow of.

In concluding this Report I would point out the necessity of provision being made in next year's Estimates for Pounds, at the Northern and Eastern City Stables. Sheds also will have to be built for the protection of the plant, much of which is very valuable. At present, the carts, etc., are without any protection whatsoever from the weather.

The steam road rollers, grading machines, etc., are in good order. The stone crushers, such as they are, have been kept in repair, and are in fair condition: but I must point out that they are of inadequate capacity to crush stone in competition with contractors, whose tenders on Local Improvement Works compete with those submitted by you, I understand. If this policy is to be pursued, a larger plant and more extended facilities for crushing stone will have to be provided.

I would also urge that some provision of a permanent character be made for workshops where we carry on the construction of wagons, carts, etc, and repairs at Frederick Street yard. Under existing conditions we are very much handicapped. If the Canadian Pacific Railway Co. carry out their contemplated expropriation of a portion of the property at the above named yard on the north side, and refuse to lease to us the property to the west of our City Dock, our accommodation will be greatly curtailed, and we shall not be able to crush stone beyond what will be needed for repair work.

Respectfully submitted,

JOHN JONES,

Street Commissioner.

LIST OF PLANK SIDEWALKS CONSTRUCTED AS LOCAL IMPROVEMENTS, BY THE STREET COMMISSIONER'S DEPARTMENT DURING YEAR 1904.

DISTRICT NO. 1.

Street.	Side.	From.	To.	Width (feet)	Length (feet)	Lumber (feet)	Nails (lbs.)	Total Cost.
Amelia & Lamb	S..	Sumach	Pt. 475' e.	5 $\frac{1}{2}$	492	7,379	300	\$ 209 88
Bain	N..	Logan	Carlaw	4	629	7,477	250	224 80
Cherry	W..	Front	Pt. 925' s.	4	864 $\frac{1}{2}$	9,456	300	257 73
Dunedin	E..	Baird	Shudell	4	563	6,027	200	161 44
Lee	W..	Queen	1406' s.	4	1,397	15,064	500	475 94
Water	W..	Eastern	Front	4	488	5,552	200	410 59
		Curbing & spikes				1,547	125	.....
		Cedar posts	95 .....					.....
Wheeler	W..	Queen	200' n.	4	204	2,245	75	69 99
Waverley	E..	775' s. of Queen..	664' further south..	4	664	8,508	300	369 32
		Curbing & spikes				1,787	50	.....
		Cedar posts	119 .....					.....

DISTRICT NO. 3.

Street.	Side.	From.	To.	Width (feet)	Length (feet)	Lumber (feet)	Nails (lbs)	Total Cost.
Manitou Rd.	C..	The bridge	951' s.	10	951	3,776	655	\$ 714 68
Pears	N..	633' east of Avenue Rd.	Pt. 354' e.	4	354	1,180	110	185 03
		Curbing & spikes				26,241	20	.....

DISTRICT NO. 4.

Street.	Side.	From	To	Width (feet)	Length (feet)	Lumber (feet)	Nails (lbs.)	Total Cost.
Dupont	S..	Bathurst	Howland	4	629	6,710	200	\$ 176 45

DISTRICT No. 5.

Street.	Side.	From	To	Width (feet)	Length (feet)	Lumber (feet)	Nails (lbs.)	Total Cost.
								\$ c.
Atlantic	W ..	King	Liberty	4	675	7,200	300	191 41
Burnfield ...	N ..	Ossington	Shaw	4	686	7,387	260	327 10
		Curbing and Spikes				2,067	50	
		Cedar Posts						90.
Christie	E ..	Bloor	City limit	5½	3,247	47,623	1400	1130 33
Hallam	N ..	Shaw	Ossington	4	684	7,352	250	239 97
Lennox	S ..	Manning	Euclid	4	308	3,286	125	158 70
		Curbing and Spikes					910	25
		Cedar posts						46.
Mitchell	N ..	Tecumseth	Niagara	5½	840	12,320	500	415 68
Montrose ...	E ..	150' n. of College	600 ft. north	4	546	5,854	200	157 78
(Laid only		from 168 ft. north of College Street	to 546' furth'r north.)					
North Markham.	W ..	Olive	287 ft. north	4	300	3,200	125	86 32
Ossington ...	W ..	Van Horne	Hallam	4	899	9,590	350	255 01
Preston	W ..	Hallam	324 ft. south	4	384	4,192	150	113 13
Yarmouth ...	N ..	Clinton	Christie	4	317	3,382	125	91 23

DISTRICT No. 6.

Street.	Side.	From.	To.	Width (feet)	Length (feet)	Lumber (feet)	Nails (lbs.)	Total Cost.
								\$ c.
Dundas	N ..	Rusholme	505' w.	6	525	8,400	175	215 71
Hepbourne ..	N ..	Havelock	Rusholme	4	357	4,114	125	169 36
		Curbing & spikes				1,100	25	
		Cedar posts						46.
Norfolk	B ..	Shirley	312' n.	4	595	6,450	250	180 66
Regent	S ..	Dundas	595' w.	4	154	1,636	50	69 88
Salem	E ..	Hallam	S. limit of No. 233	5½	502	7,480	225	196 51
Symington ..	E ..	Royce	500' s.	5½	618	9,074	250	223 13
West Lodge.	E ..	Marion	600' n.	4	254	2,878	100	145 08
William	S ..	Edwin	W. terminus					
		Curbing & spikes				846	25	
		Cedar posts						33.

WATER WORKS.

REPORT FOR THE YEAR ENDING DECEMBER 31st, 1904.

CITY ENGINEER'S OFFICE,
Toronto, December 31st, 1904.

FINANCIAL.

The total expenditure for the year of the portion of the Water Works Department which is under the control of the City Engineer, amounted to \$468,440.74, divided as follows:

Maintenance.....	\$190,778 81
Construction.....	27,008 26
Renewals	10,572 26
Special Work	240,081 41

The expenditure of the Revenue and Collection Branch, under the control of the City Treasurer, amounted to \$26,736.70.

DISTRIBUTION.

The total length of mains laid during the year is 31,244½ feet, divided as follows:

500 feet of 36-in. cast-iron main.				
1,123	"	20-in.	"	"
3,117½	"	16-in.	"	"
5,211	"	12-in.	"	"
20,877¼	"	6-in.	"	"
415½	"	4-in.	"	"

At the end of the year the total length of mains in use was 272.853 miles.

STOP VALVES.

54 stop valves were placed in position during the year, making a total in use of 2,461 stop valves, and 70 check valves.

SERVICES.

2,036 services were laid during the year.

LEAKS ON MAINS.

The average cost of repairs to leaks on mains, exclusive of repairs to asphalt pavements, was \$8.95 per leak, and the number of leaks per mile of distribution 0.65, the average cost per mile being \$5.84.

RESERVOIR.

The average depth of water in the Reservoir during the year was 15 feet 5 inches, which represents 21,587,244 gallons. We were unable to empty the Reservoir during the year for cleaning purposes owing to the difficulty of keeping up the supply of water and pressure in the mains.

MAIN PUMPING STATION.

During the year the average daily consumption was 25,489,953 gallons, an increase of about 1,556,106 gallons per day.

For complete details regarding Water Works matters, reference should be had to the report of the Deputy City Engineer, which follows.

Respectfully submitted,

C. H. RUST,

*City Engineer, and Chief Engineer and
Manager of the Water Works.*

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Report of Assistant Engineer in Charge of Water Works.

CITY ENGINEER'S DEPARTMENT,
Toronto, December 31st, 1904.

MR. C. H. RUST,
City Engineer.

DEAR SIR,—I herewith submit the Annual Report of the Department for the year ending December 31st, 1904.

DISTRIBUTION.

31,244 $\frac{1}{4}$ feet of mains have been laid this year, consisting of:

500 feet of 36-in. cast iron main.			
1,123	"	20-in.	"
3,117 $\frac{1}{2}$	"	16-in.	"
5,211	"	12-in.	"
20,877 $\frac{1}{4}$	"	6-in.	"
413 $\frac{1}{2}$	"	4-in.	"
<hr/>			
31,244 $\frac{1}{4}$ feet.			

At the end of the year the total length of mains in use was 272,853 miles.

STOP VALVES.

The number of valves placed in position is as follows:

1	36-inch stop valve.
4	20-inch stop valves.
2	16-inch "
9	12-inch "
36	6-inch "
2	4-inch "

There were taken out during the year one 30-inch and one 12-inch stop valve, making a total in use of 2,461 stop valves.

There were placed in position one 12-inch and two 6-inch check valves, making a total in use of 70 check valves.

 HYDRANTS.

Fire hydrants to the number of sixty-nine (69) have been placed on the streets during the year, consisting of twenty 4-ways, eighteen 3-ways and thirty-one 2-way hydrants.

In addition, twenty-nine 2-way hydrants have been replaced by 3-way hydrants.

One private 3-way hydrant was placed on the Trinity College main; four 2-way hydrants were removed from off the street, leaving a total of 3,205 hydrants in use.

HOUSE SERVICES.

The total number of services laid this year was 2,036, an increase of 45 per cent. over the number laid last year.

LEAKS ON MAINS.

The following leaks on mains were repaired during the year :

3	on 36-inch main.
3	" 30-inch "
5	" 24-inch "
2	" 20-inch "
75	" 12-inch "
1	" 10-inch "
3	" 8-inch "
84	" 6-inch "
2	" 4-inch "

178 of all sizes.

The cost of repairs, exclusive of repairs to asphalt pavements, was \$1,584.55, including material used, or an average cost of \$8.95 per leak.

The average number of leaks per mile of distribution is 0.65, and the average cost per mile \$5.84.

STORE HOUSE.

Supplies for the various branches have been well maintained and the stock on hand at end of the year checked.

STABLES.

The cost of this branch for the year was \$5,297.47 : this includes feed, veterinary surgeon, repairs to wagons, harness, etc.

METER AND MACHINE SHOP.

The following work was performed by this branch during the year:

New meter takers.....	190
Meters rebuilt in shop.....	268
" taken off for repairs.....	339
New meter boxes.....	100
Total number of meters in use.....	2,043

The above does not include meters repaired without removal from services.

The usual repair work has been performed for the Main, High Level and Island Pumping Stations, Dredge "Daniel Lamb," City Hall hydrants, valves, fountains, reservoir, house services, etc., etc.

The blacksmith and helper have been fully employed during the year, stop cock rods made being 3,550.

HYDRANTS AND VALVES.

The work of this branch for the year was as follows:

HYDRANTS.

New leather valves.....	8
New leather joint rings.....	7
Hydrants replaced with repaired hydrants.....	5
Hydrants frozen, blown out, pumped, packed and oiled.....	243
Hydrants frozen, fired, blown out, pumped, packed and oiled.....	286
Hydrants pumped, packed and oiled.....	878
Hydrant inspections.....	40,097
Hydrants cleaned, repaired, tested and painted.....	10
Hydrants jacketed and tested complete.....	3
Cap leather.....	10
Hydrants set with bar chain.....	4
Nozzles caulked.....	3
Hydrants packed and oiled.....	2,142
Mains blown out.....	5
2-way hydrants replaced with 3-way hydrants.....	31
New hydrants placed.....	60
Hydrants repaired.....	1,203
New nozzles.....	2
New screws.....	1
New brass nuts.....	1

VALVES.

VALVES REPAIRED.

30-inch.	12-inch.	6-inch.	4-inch.
1	1	9	1

VALVES TESTED.

20-in.	16-in.	12-in.	8-in.	6-in.	4-in.	2-in.	1½ in.	1-in.	¾-in.
6	3	16	1	62	37	114	10	27	33
			½-inch.		¾-inch.				
			21		4				

NEW VALVES PLACED.

6-inch.	16-inch.	20-inch.
1	1	3

BRASS WORK TESTED.

DOUBLE COCKS.

¾ x ½ x ½-inch.	½ x ½ x ½-inch.
108	565

SINGLE COCKS.

1-inch.	¾-inch.	½-inch.	½-inch.	¾-inch.
58	212	151	1,835	314

COUPLINGS.

½-inch.	¾-inch.	¾-inch.
1,767	300	431

SINGLE NIPPLES.

1-inch.	¾-inch.	½-inch.
203	180	310

DOUBLE NIPPLES.

¾-inch.	¾-inch.	½ inch.
295	705	731

STOP COCKS.

2-inch.	1½-inch.
68	100

RESERVOIR.

The average depth of water in the reservoir for the year was fifteen feet five inches (15' 5"), equal to an elevation of two hundred and eleven feet, five inches (211' 5"), above zero, representing 21,587,244 gallons.

The lowest elevation was 197' 6" in February and the highest, 215' 3" in June and July.

It was not possible to empty the reservoir this year for cleaning owing to the difficulty of keeping up the supply of water and pressure in the mains.

HIGH LEVEL PUMPING STATION.

1,321,392,096 gallons of water was re-pumped during the year, being an average of 3,620,252 gals. per day.

The coal consumed amounted to 1,303 $\frac{1399}{2000}$ tons. The cost of running the station was \$10,737.30.

ISLAND PUMPING STATION.

Pumping at this station began on the 28th April and continued till the 1st of November, when the Station was closed for the season. It will be necessary to instal a second boiler next year to enable the plant to be kept in proper order and to avoid danger of accidents. The cost of running the plant including services, mains, fire hydrants and repairs for the season, was \$2,404.22.

The coal used was 130 $\frac{1550}{2000}$ tons.

MAIN PUMPING STATION.

The pumping for the year amounted to 9,301,833,132 imperial gallons.

Nos. 1 and 2 engines pumping	1,949,341,362
Nos. 4 and 5 engines pumping	7,352,491,770

The coal consumed under boilers Nos. 1 and 2 engines being 6,784 $\frac{1900}{2000}$ tons, and under Nos. 4 and 5 engines, 9,637 $\frac{515}{2000}$ tons.

This year Nos. 1 and 2 ran	9,140 hours.
Last year Nos. 1 and 2 ran	8,932 hours.
	<u>208 hours.</u>
This year Nos. 4 and 5 ran	17,430 hours.
Last year Nos. 4 and 5 ran	16,671 hours.
	<u>759 hours.</u>
Increase	967 hours.

This year the average quantity pumped per day was 25,489,953 imperial gallons; last year the average was 23,933,847 imperial gallons, being an average increase of 1,556,106 gallons per day for 1904.

The cost of operating the station for the year was:

Coal and cartage	\$52,643 50
Wages, oil, waste and repairs	41,367 11
	<u>\$94,010 61</u>

The building to contain the new fifteen-million gallon engine is nearing completion; the cost has been considerably increased owing to the increase in wages to bricklayers, increased cost of material and the fact that the foundation of the old building upon which the new one has been erected, instead of being found water-tight, leaked so badly as to require a concrete facing wall, the walls having to sustain a water pressure of about 10-feet head.

GENERAL.

The whole of the 6-ft. pipe required for the conduit from the shore crib to the south tunnel shaft has been manufactured and delivered by McNeil Bros. of Pittsburg, including special branches, manholes and expansion joints. The four 6-ft. valves and two 5-ft. valves are in process of manufacture by the Bertram Engine Works Co. of this place; the excavation for and the laying of same under contract with Mr. Frank Simpson, is under way.

Plans and specifications for the tunnel under the Bay are being prepared and tenders for the construction of same will be called for as soon as completed.

The 36-inch cast iron pipe to be laid from the corner of Bathurst and College Streets to the Reservoir has been nearly all delivered by McQuillan & Co., the contractors, and the laying is being proceeded with by the Constructing and Paving Co., the successful tenderers.

The special branches for the 36-inch pipe are being supplied by the Dodge Manufacturing Co., and the stop valves by Matthew Warnock.

The 20-inch main from the High Level Station to St. George Street has been delivered and laid, as has the 16-inch main on St. George Street between Dupont Street and Bloor Street.

Contracts were also let for the 24-inch cast iron main on Front Street from Church to Sumach Streets, and the 16-inch main on Queen Street from Sumach Street to Broadview Avenue.

MAINTENANCE OF DISTRIBUTION.

The following work has been done in connection with services:

Leaks repaired	2,587
Leaks inside reported.....	799
False reports	272
Services blown out.....	554

Services, stop cocks dug to	2,780
“ “ boxes cleaned out	1,162
“ water turned on	206
“ “ off	1,248
“ frozen, thawed by electric current	506
“ “ services renewed	23
“ taken out of mains	26
“ moved to suit new sidewalks	1,714

TEMPERATURE OF WATER.

The average temperature for the year, taken at the City Hall tap, was 42.72 degrees Fahr. The highest temperature 64 degrees Fahr. on 14th of September, and the lowest 35 degrees Fahr. on the 4th of March.

SAND PUMP.

The pump commenced work on the 29th April and continued till the 23rd November, when it was taken to Medlar & Arnott's dry dock to be thoroughly overhauled.

The timber above water, including deck sides and ends, were in a very shaky condition from decay.

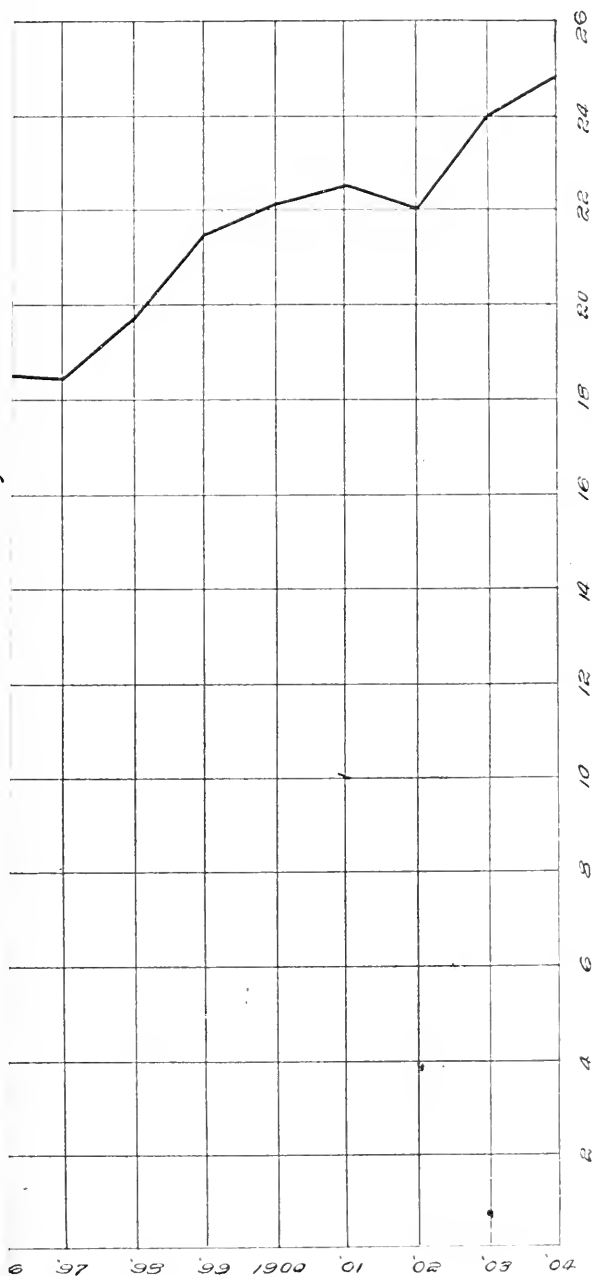
Work started at the Light House Cut and continued till the 28th of May; from the 28th of May until the 2nd June at Mohawk Ave.; at Hooper Ave., from the 2nd June to 10th; moved back to Light House Cut till 18th June then to Pawnee and St. Andrew's until the 27th June, then to Western Sand Bar, working up to 8th August; Island Basin to 25th August; Hooper Ave., to 30th; moved to Fisherman's Island, worked up to 8th September, then to Keating's Channel till 17th, from there to Shield's Cut until 5th October; returned to Light House Cut and continuing to the 23rd November, when work for season closed.

C. L. FELLOWES,

Deputy City Engineer.

D DAILY

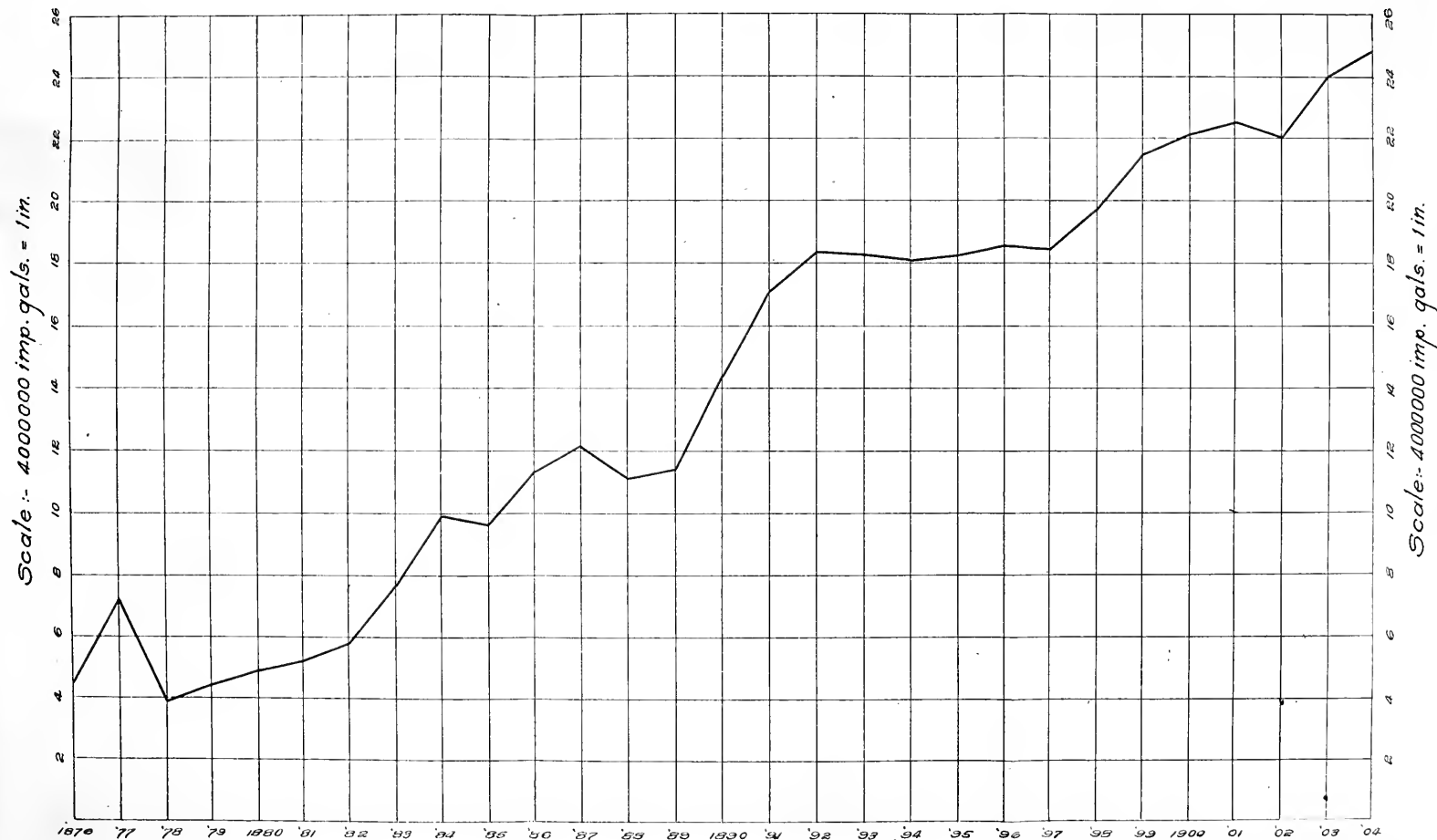
Scale :- 4000000 imp. gals. = 1 in.



Scale :- 4000000 imp. gals. = 1 in.

City Engineer's Office,
Toronto, Ont. May 4th 95.

AVERAGE QUANTITY ^{of} WATER PUMPED DAILY FROM 1876



City Engineer's Office,
Toronto, Ont. May 4th 1905.

SCHEDULES

WATER WORKS DEPARTMENT

NOTE. — For Schedule No. 1, "Cash Expenditure on Maintenance Account," etc., see page 133.

For Schedule No. 10, "Analysis of Expenditure at Main Pumping Station," see page 134.

SCHEDULE No. 2.

STATEMENT OF WATER PUMPED BY ENGINES NOS. 1 AND 2 FOR THE YEAR 1904.

Month.	No. of Days on which Engines were Working.		Number of Hours Working Each Month.				Number of Strokes for Each Engine per Month.		Quantity of Water Pumped per Month by Each Engine in Imp. Gals. Gross.		Total Quantity Pumped in Imp. Gals. Gross.	Percentage of Slip.	Total Quantity Pumped in Imp. Gals. Net.	Average Pressure on Pumps	Average Level of Water in Well Below Zero.	Total Quantity of Coal Consumed per Month by Engines. Nos. 1 and 2	
			No. 1.		No. 2.												
	No. 1.	No. 2.	h.	m.	h.	m.	No. 1.	No. 2.			No. 1.	No. 2.			Lbs.	Ft. In.	Tons. Lbs.
January	7	30	67	15	682	30	17,500	389,652	10,830,000	178,850,268	189,680,268	4	182,003,058	92.3	20	11	651 875
February	5	29	37	40	692	05	26,079	400,370	5,916,012	183,769,830	189,715,842	4	182,127,299	91.1	20	7	676 770
March	3	31	7	55	737	25	5,506	402,710	1,255,368	181,843,890	186,099,258	4	178,655,288	94.6	19	9	689 570
April	28	17	552	00	366	05	360,360	490,712	82,162,080	87,536,808	169,698,888	4	162,940,933	92.0	18	7	577 025
May	28	27	357	05	505	10	222,717	262,528	50,786,316	120,500,352	171,286,668	4	161,435,202	95.3	17	6	548 1,135
June	30	24	434	50	285	45	268,389	166,996	61,192,692	76,651,161	137,843,856	4	132,330,102	95.2	16	9	467 610
July	18	26	264	30	488	15	173,673	273,851	39,597,144	125,697,609	165,295,053	4	158,683,251	95.3	17	5	530 520
August	14	26	164	05	559	15	106,636	297,978	21,313,008	136,771,902	161,081,910	4	151,611,511	95.4	17	7	572 1,970
September	11	25	164	20	513	05	119,262	504,291	27,191,736	139,670,946	166,862,682	4	160,188,175	94.9	18	1	558 1,760
October	30	13	564	55	202	05	395,677	117,254	90,214,356	53,819,586	144,033,942	4	138,272,585	95.3	18	0	526 1,860
November	30	18	520	40	199	20	336,918	115,282	76,817,304	52,914,438	129,731,742	4	124,542,473	95.0	18	8	493 930
December	31	19	535	40	208	20	356,980	123,348	81,391,440	56,616,732	138,008,172	4	132,487,846	95.5	18		491 1,755
Totals	235	285	3,670	55	5,469	20	2,419,727	3,044,975	551,697,756	1,397,643,525	1,949,341,281	4	1,871,367,636	1,131.9	222	6	6,784 810
Monthly averages	19.5	23.7	305	54	455	46	201,644	253,748	45,974,813	116,470,293	162,445,106	4	155,947,303	94.3	18	6	565 734
Daily averages	.....	.....	10	01	14	56	6,611	8,319	1,607,370	3,818,698	5,326,069	4	5,113,026	91.3	18	6	18 1,073

SCHEDULE No. 3.

STATEMENT OF WATER PUMPED BY ENGINES NOS. 4 AND 5 FOR THE YEAR 1904.

Month.	No. of Days on which Engines were working.		Number of Hours working each Month.		Number of Strokes made by Engines each Month.		Quantity of Water Pump'd each Month by each Engine—Imperial Gallons, Gross.		Total Quantity Pumped by Nos. 4 & 5 Engines, Imp. Gallons Gross.	Percentage of Slip.	Total Quantity Pumped, Imp. Gallons Net.	Average Pressure on Pumps.	Average Lift by Engines.	Total Quantity of Coal used under Boilers each Month.
	No. 4.	No. 5.	No. 4.	No. 5.	No. 4.	No. 5.	No. 4.	No. 5.	Pounds.	Ft. In.	Tons, Lbs.	Pounds.	Ft. In.	Tons, Lbs.
January	31	31	735 45	738 25	1,470,525	1,550,680	310,280,775	325,612,800	635,923,575	2	623,205,101	90.9	26 4	818 1,435
February	29	29	696 00	656 10	1,388,382	1,388,211	292,948,602	291,524,940	584,473,542	2	572,784,072	90.3	25 9	743 920
March	31	31	711 10	735 55	1,490,808	1,553,037	314,560,488	326,137,770	640,698,258	2	627,884,293	93.5	24 9	863 500
April	30	30	718 00	711 35	1,399,726	1,468,859	295,342,186	308,460,390	603,802,576	2	591,726,525	91.1	23 3	785 5
May	31	31	710 35	712 10	1,414,533	1,527,765	297,833,463	320,830,650	618,664,113	2	606,290,831	93.9	22 3	814 515
June	30	30	719 30	719 10	1,372,858	1,462,554	289,673,038	307,136,310	596,809,378	2	584,873,191	93.5	21 9	764 450
July	31	31	711 00	710 35	1,418,693	1,512,093	299,341,223	317,539,530	616,883,753	2	604,546,078	94.1	22 2	806 1,400
August	31	31	741 55	738 20	1,424,537	1,515,343	300,577,307	318,222,030	618,799,337	2	606,423,351	94.3	22 6	818 880
September	30	30	719 00	717 00	1,391,562	1,491,582	291,252,582	313,232,220	607,484,802	2	595,335,106	93.4	23 0	815 180
October	31	31	736 35	728 50	1,405,138	1,490,596	296,184,118	313,025,160	609,509,278	2	597,319,093	94.5	22 6	825 1,660
November	30	30	716 00	718 25	1,377,271	1,461,217	290,604,181	307,485,570	598,089,751	2	586,127,956	94.2	23 7	781 1,490
December	31	31	743 00	732 45	1,444,917	1,506,552	301,877,487	316,375,920	621,253,407	2	609,828,339	94.5	24 3	800 1,380
Totals	366	366	8,751 30	8,679 20	16,998,950	17,931,492	3,586,778,450	3,765,613,320	7,352,391,770	2	7,205,343,939	1,118.2	281 10	9,637 515
Monthly Averages ..	30.5	30.5	729 17	723 16	1,416,579	1,494,291	298,064,870	313,891,110	612,699,314	2	600,445,328	93.1	23 5	803 209
Daily Averages .....	.....	.....	23 54	23 42	46,445	48,993	9,779,941	10,288,561	20,088,502	2	19,686,732	93.1	23 5	26 662

SCHEDULE No. 4.

RECORD OF WATER RE-PUMPED AT HIGH LEVEL STATION FOR THE YEAR 1901.

Month.	Number of Hours Engines working.		Number of Revolutions made by Pumps.		Quantity of Water Re-pumped.		Total Quan- tity of Water Re-pumped by both En- gines in Imp Gallons Gross.	Percentage of Ship.	Total Quan- tity of Water Re-pumped Imp. Gallons Net.	Average Pressure on Force Mains.		Average Pressure on Suction Mains.		Total Quan- tity of Coal Consumed under Boilers.		Coal Con- sumed for Banking Pipes, Raising Steam, etc.		Coal Con- sumed while Pumping.			
	No. 1.	No. 2.	No. 1.	No. 2.	No. 1.	No. 2.				Lbs.	Tons.	Lbs.	Tons.	Lbs.	Tons.	Lbs.	Tons.	Lbs.	Tons.	Lbs.	Tons.
January	h. m. 497 30	h. m. 527 30	1,660,392	801,769	75,547,836	36,079,200	111,627,036	1	110,510,766	55.09	14.07	55.09	14.07	108	409	31	400	91	1,579		
February	458 05	490 05	1,197,002	772,712	68,113,591	34,772,010	102,885,631	1	101,856,775	54.86	13.72	54.86	13.72	101	1,879	10	306	91	1,579		
March	522 55	550 55	1,707,101	854,486	77,686,882	38,451,870	116,138,752	1	114,977,365	55.99	14.71	55.99	14.71	114	1,751	10	1,000	104	791		
April	480 00	510 00	1,513,268	730,309	70,218,691	32,863,905	103,082,599	1	102,051,771	55.01	13.78	55.01	13.78	96	305	10	1,000	85	1,309		
May	496 00	527 00	1,592,107	738,362	72,451,518	33,226,290	105,680,808	1	104,621,000	54.88	14.74	54.88	14.74	99	1,419	11	400	88	1,019		
June	480 00	510 00	1,518,591	758,556	70,460,890	34,045,020	104,505,910	1	103,460,851	54.88	14.85	54.88	14.85	98	901	10	1,700	87	1,204		
July	496 00	545 00	1,605,028	831,378	73,028,774	37,547,010	110,575,784	1	109,470,024	55.79	14.17	55.79	14.17	106	271	10	1,700	95	571		
August	503 00	712 00	1,617,495	941,476	73,596,022	42,366,420	115,962,442	1	114,802,818	54.84	14.75	54.84	14.75	115	1,727	11	400	104	1,327		
September	480 00	720 00	1,517,451	984,998	69,041,020	41,321,910	113,368,930	1	112,235,241	54.58	14.88	54.58	14.88	118	269	10	1,700	107	569		
October	503 00	737 00	1,602,119	1,041,966	72,897,779	46,888,470	119,786,249	1	118,588,387	54.74	14.99	54.74	14.99	116	1,181	10	1,700	105	1,484		
November	486 00	709 00	1,557,488	1,009,229	70,865,704	45,115,365	116,281,069	1	115,118,199	54.68	14.98	54.68	14.98	112	1,048	11	400	101	648		
December	569 00	713 30	1,536,428	998,597	69,907,474	44,936,865	114,844,339	1	113,695,896	53.19	13.16	53.19	13.16	115	186	10	1,700	101	486		
Totals	5,911 30	7,252 00	18,985,103	10,461,829	863,822,184	470,917,365	1,334,739,489	1	1,321,392,096	658.56	174.83	658.56	174.83	1,303	1,399	130	1,173	999	999		
Monthly Averages ..	492 37	604 20	1,582,091	872,069	71,385,182	39,243,108	111,228,290	1	110,116,008	54.86	14.56	54.86	14.56	608	1,419	10	1,700	97	1,563		
Daily Averages	16 11	19 52	52,013	28,670	2,366,636	1,290,181	3,656,820	1	3,620,252	.....	.....	.....	.....	3	1,143	716	3	215	215

SD 1904.

1904.

	Coal.			
Quantity Imported.	Quantity Consumed.		Total Consumption.	
Gals. Net.	Tons.	Lbs.	Tons.	Lbs.
	651	875		
	818	1,135		
298,162			1,470	10
	676	770		
	743	920		
911,281			1,419	1,690
	689	570		
	863	500		
539,581			1,552	1,070
	577	25		
	785	5		
637,458			1,362	30
	548	1,135		
	814	515		
726,033			1,362	1,650
	467	640		
	764	450		
203,293			1,231	1,090
	530	520		
	806	1,400		
229,329			1,336	1,920
	572	1,970		
	818	880		
064,865			1,391	850
	558	1,760		
	815	180		
523,281			1,373	1,940
	526	1,860		
	825	1,660		
591,678			1,352	1,520
	493	930		
	781	1,490		
370,429			1,275	420
	491	1,755		
	800	1,380		
316,185			1,292	1,135
711,575	.....	...	16,421	1,325
799,758	.....	.....	44	1,735

1904

SCHEDULE No. 5.
COMPARATIVE STATEMENT OF COAL CONSUMED AND WATER PUMPED BY MONTHS FOR THE YEARS 1903 AND 1904.

MONTH.	1903.						1904.					
	Engine Nos.	Water.		Coal.			Engine Nos.	Water.		Coal.		
		Quantity Pumped.	Total Quantity Pumped.	Quantity Consumed.	Total Consumption.			Quantity Pumped.	Total Quantity Pumped.	Quantity Consumed.	Total Consumption.	
		Imp. Gals. Net.	Imp. Gals. Net.	Tons. Lbs.	Tons. Lbs.			Imp. Gals. Net.	Imp. Gals. Net.	Tons. Lbs.	Tons. Lbs.	
January	1 and 2 .. 4 and 5	87,949,705 626,251,659	714,201,364	297 1,565 835 1,840	1,133 1,405		1 and 2	182,093,058 623,205,104	805 298,162	651 875 818 1,135	1,470 10	
February	1 and 2	86,310,291		285 205			1 and 2	182,127,209		676 770		
	4 and 5	552,280,960	638,591,254	749 1,380	1,031 1,585		4 and 5	572,784,072	754,911,281	743 920	1,419 1,690	
March	1 and 2	100,165,165		353 1,430	1,146 1,225		1 and 2	178,655,288		689 570	1,552 1,070	
	4 and 5	615,868,463	-716,033,628	792 1,795			4 and 5	627,881,293		863 500		
April	1 and 2	304,964,770		876 810	1,352 1,910		1 and 2	162,940,933	754,637,458	577 25	1,362 30	
	4 and 5	357,428,088	662,392,868	476 1,130			4 and 5	591,726,525		785 5		
May	1 and 2	208,107,723		827 840	1,375 1,490		1 and 2	164,435,202	770,726,033	548 1,135	1,362 1,650	
	4 and 5	536,148,094	741,255,817	548 650			4 and 5	606,290,831		814 515		
June	1 and 2	131,130,579		470 1,590	1,231 1,070		1 and 2	132,330,102	717,263,293	467 640	1,231 1,030	
	4 and 5	587,067,098	718,197,677	760 1,480			4 and 5	584,873,191		764 450		
July	1 and 2	150,510,851		539 240	1,311 500		1 and 2	158,683,251	763,229,329	530 520	1,336 1,920	
	4 and 5	622,660,976	773,171,827	772 350			4 and 5	604,546,078		806 1,400		
August	1 and 2	139,797,170		479 1,680	1,258 980		1 and 2	154,641,514	761,064,865	572 1,970	1,391 850	
	4 and 5	609,690,858	749,488,028	778 1,300			4 and 5	606,423,351		818 880		
September	1 and 2	150,590,986		514 660	1,291 1,380		1 and 2	160,188,175	755,523,281	558 1,760	1,373 1,940	
	4 and 5	615,552,253	766,248,239	777 720			4 and 5	595,335,106		815 180		
October	1 and 2	144,837,009		524 1,340	1,339 630		1 and 2	138,272,585	735,591,678	526 1,860	1,352 1,520	
	4 and 5	622,255,320	767,092,329	814 1,290			4 and 5	597,319,093		825 1,660		
November	1 and 2	139,507,284		514 950	1,284 740		1 and 2	124,542,473	710,670,429	493 930	1,275 420	
	4 and 5	586,258,407	725,765,691	769 1,790			4 and 5	586,127,956		781 1,490		
December	1 and 2	141,342,077		548 1,245	1,369 1,580		1 and 2	132,487,846	741,316,185	491 1,755	1,292 1,135	
	4 and 5	618,882,214	760,224,291	821 335			4 and 5	608,828,339		800 1,380		
Totals			8,735,658,003		15,030 615				9,076,711,575		16,421 1,325	
Daily average			23,933,847		41 911				24,799,758		44 1,735	

SCHEDULE No. 6.
COMPARATIVE STATEMENT SHOWING NUMBER OF GALLONS PUMPED, QUANTITY AND COST OF FUEL, ETC., FROM 1876 TO 1903, INCLUSIVE.

YEAR.	Total Water Pumped		Quantity of Fuel. Lbs.	Total Cost of Fuel.		Average Daily Quantity of Water Pumped		Average Daily Consumption of Coal.		Water Pumped per Pound of Fuel.
	Imp. Gals.	Imp. Gals.		Imp. Gals.	Lbs.	Imp. Gals.	Lbs.			
1876	1,623,139	876	6,998,282	\$19,645	75	4,151,202	19,093	28,515	232.02	
1877	2,633,433	932	10,407,992	25,556	29	7,214,887	22,246	22,246	174.55	
1878	1,417,370	918	8,120,000	15,196	20	3,883,208	29,787	118,09	118.09	
1879	1,610,101	512	10,872,211	19,313	07	4,111,245	31,953	31,953	152.17	
1880	1,785,859	706	11,694,808	28,455	72	4,879,122	33,950	33,950	154.18	
1881	1,910,430	119	12,391,871	31,410	01	5,231,036	32,015	180,17	180.17	
1882	2,108,933	115	11,685,556	30,170	61	5,777,899	17,306	162,74	162.74	
1883	2,809,965	181	17,266,679	13,529	08	7,698,511	51,128	183,00	183.00	
1884	3,645,112	082	19,920,782	52,525	56	9,960,221	51,081	189,73	189.73	
1885	3,537,182	508	18,644,165	46,589	27	9,691,733	52,837	214,37	214.37	
1886	4,134,376	998	19,285,371	11,979	32	11,327,060	63,791	189,71	189.71	
1887	4,117,938	169	23,283,900	50,051	85	12,103,910	56,049	197,57	197.57	
1888	4,041,964	514	20,457,935	46,600	77	11,073,875	52,690	215,72	215.72	
1889	4,148,784	634	19,231,910	44,135	10	11,366,525	67,536	212,96	212.96	
1890	5,249,760	226	31,615,830	56,239	99	14,382,901	80,291	211,86	211.86	
1891	6,207,656	103	29,300,240	60,012	77	17,007,275	91,278	193,00	193.00	
1892	6,659,925	650	31,565,875	71,805	25	18,246,371	71,270	255,17	255.17	
1893	6,646,021	188	26,013,840	64,702	86	18,208,278	73,185	245,67	245.67	
1894	6,589,492	112	26,822,115	51,902	85	18,653,103	58,024	313,5	313.5	
1895	6,639,680	218	21,178,879	40,221	85	18,190,902	50,837	361,4	361.4	
1896	6,718,187	980	18,606,508	25,307	90	18,527,836	56,743	321,64	321.64	
1897	6,723,757	030	20,711,250	26,880	50	18,121,253	60,548	322,91	322.91	
1898	7,136,334	102	22,100,145	27,572	00	19,551,600	67,612	316,99	316.99	
1899	7,824,318	217	21,682,935	26,684	57	21,436,569	66,160	333,95	333.95	
1900	8,064,384	595	21,118,565	38,668	51	22,094,201	72,034	314,89	314.89	
1901	8,299,298	465	26,292,640	39,402	87	22,163,831	61,575	339,15	339.15	
1902	7,993,916	325	23,769,430	39,260	22	21,901,140	82,900	288,68	288.68	
1903	8,735,658	003	30,260,615	54,275	93	23,933,809	89,735	276,36	276.36	
1904	9,076,711	575	32,843,325	55,781	65	24,799,758				

* A larger percentage was allowed for slip in 1894 and 1895, than in other years.

SCHEMATIC No. 7.
 QUANTITY OF WATER PUMPED AND QUANTITY CONSUMED DURING EACH MONTH OF 1901, WITH AMOUNT OF DAILY CONSUMPTION.

Month.	Total Quantity Pumped per Month in Imperial Gallons	Quantity Stored in Reservoir at end of each Month. Imperial Gallons	Quantity Consumed during each Month. Imperial Gallons	Average Daily Consumption of Water. Imperial Gallons	Average Daily Consumption of Coal at Main Pumping Station
Stored in Reservoir on 31st December, 1900.					
January	805,298,162	24,608,074	828,529,706	26,726,761	1,170 10
February	754,911,281	13,776,528	711,270,986	25,561,068	1,419 1,690
March	806,539,581	24,608,074	796,918,330	25,708,010	1,552 1,070
April	754,637,158	12,018,392	767,197,140	25,572,504	1,362 30
May	770,726,033	29,178,356	753,596,069	24,309,550	1,362 1,650
June	717,203,293	25,217,904	721,163,745	24,038,791	1,231 1,090
July	763,229,329	26,013,256	762,403,377	24,533,676	1,336 1,920
August	761,064,865	18,834,088	768,274,033	24,783,033	1,391 850
September	755,523,281	20,395,868	753,961,501	25,132,050	1,373 1,540
October	735,591,678	22,184,937	733,802,609	23,671,051	1,352 1,520
November	710,670,429	27,080,047	705,775,319	23,525,841	1,275 1,420
December	741,316,185	23,794,967	714,601,265	24,019,395	1,292 1,135
Totals	9,076,711,575	.....	9,077,524,680	297,641,736	16,421 1,325
Averages	756,392,631	.....	756,460,390	24,803,478	1,368 943

COMPARATIVE STATEMENT SHOWING INCREASE OF DEPARTMENT
SCHEDULE No. 8.
YEARLY, 1875 TO 1904, INCLUSIVE.

Year.	Average Daily Consumption of Water.	Population.	Average Daily Consumption of Water per Capita for all Purposes.	Total Number of House Serves in use in each year.	Number of House Serves put in use in each year.	Total Number of Hoists in use in each year.	Total Number of Meters in use each year.	Total Number of Mains in use each year.	Average Pressure on Pumps.				
									No. 1, Worthington Engine.	No. 2, Worthington Engine.	No. 3, Inglis & Hunter Engine.	No. 4, Blake Engine.	No. 5, Blake Engine.
1875	3,124,000	68,678	49.86	2,769	842			Miles.	88.10				
1876	4,451,202	71,693	62.09	3,512	710			80,250	88.78	97.51			
1877	2,812,000	67,386	41.71	4,518	1,006			107,570	83.33	97.63			
1878	3,883,208	70,867	54.79	6,707	2,189	28		110,210	89.65	96.64			
1879	4,411,245	73,813	59.76	8,568	1,861	47		111,290	95.28	99.04			
1880	4,879,422	75,110	64.96		1,011	66		113,312	98.22	99.52			
1881	5,234,056	76,931	68.03	12,236	2,651	79		115,518	96.32	100.78			
1882	5,777,899	81,372	71.01	11,062	1,826	91		116,115	91.85	101.66			
1883	7,698,511	91,796	83.87	16,276	(1,766)	109		131,352	91.27	105.19			
1884	9,960,224	105,211	94.66	18,363	(2,087)	130		138,301	99.11	107.03			
1885	9,706,127	111,800	86.82	20,707	2,311	110	195	143,257	98.84	106.45	103.88		
1886	11,314,337	118,103	95.81	23,613	2,936	152	256	156,012	104.88	101.92	104.67		
1887	12,060,616	126,169	95.59	26,893	3,315	176	332	165,894					
1888	11,069,781	165,809	66.36	29,883	3,655	174	897	182,625	93.41	92.36	91.57		
1889	11,378,962	175,000	65.02	34,056	3,288	222	1,317	212,832	91.25	91.82	91.92		
1890	11,434,722	185,000	78.02	36,192	2,191	229	1,479	229,257	92.83	93.58			
1891	17,007,275	188,901	90.03	38,250	2,411	230	1,514	237,967	93.33	93.66	93.91		
1892	18,216,371	188,904	96.59	39,101	1,200	288	1,535	242,561					
1893	18,208,278	188,904	96.38	39,127	526	300	1,600	241,964	94.18	94.18	96.37		
1894	18,056,884	188,904	95.58	40,326	399	278	1,580	245,478	91.88	91.88	95.21	95.24	
1895	18,192,063	190,000	95.74	40,683	357		1,500		91.88	91.88	95.05	95.05	
1896	18,527,836	193,987	94.53	40,951	313	230	1,553	249,627	94.5	94.5	95.1	95.1	95.1
1897	18,378,722	195,987	93.77	41,315	361	230	1,553	252,616	95.1	95.1	95.7	95.7	
1898	19,576,957	200,000	97.88	41,838	523	230	1,580	255,625	95.3	95.3	95.9	95.9	
1899	21,436,503	225,000	95.27	42,552	714	230	1,598	257,613	94.9	94.9	95.3	95.3	
1900	22,094,204	235,000	94.01	43,212	690	230	1,700	258,774	94.0	94.0	95.5	95.5	
1901	22,507,266	235,000	95.77	44,275	1,033	239	1,800	260,321	93.8	93.8	93.2	93.2	
1902	21,901,110	235,000	88.57	45,607	1,319	241	1,830	264,166	91.1	91.1	92.6	92.6	
1903	23,353,847	245,000	93.60	48,529	1,402	241	1,841	266,955	91.6	91.6	93.2	93.2	
1904	24,803,478	250,000	99.20	50,847	2,036	245	2,013	272,853	91.3	91.3	93.1	93.1	

RECORD No. 9.

RECORD OF GAUGING AT ROSEHILL RESERVOIR FOR EACH MONTH OF 1904.

1904. Month.	Elevation of Lowest Water Above Zero.		Elevation of Highest Water Above Zero.		Average Eleva- tion Above Zero.		Average Depth in Reservoir.		Average Contents in Imperial Gallons.
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	
January	200	4	213	5	208	10	12	10	15,578,776
February	197	6	209	1	205	8	9	8	8,587,992
March	208	9	213	2	211	5	15	5	21,587,244
April	202	7	215	1	210	3	14	3	18,834,088
May	208	..	215	2	213	3	17	3	26,043,256
June	212	8	215	3	214	3	18	3	28,543,918
July	210	8	215	3	213	5	17	5	26,457,972
August	210	3	214	5	213	6	17	6	26,665,331
September	207	10	212	6	209	9	13	9	17,674,668
October	208	7	212	2	210	4	14	4	19,029,311
November	211	9	215	2	213	9	17	9	27,287,406
December	211	11	214	2	213	3	17	3	26,043,256
Averages					211	5	15	5	21,861,101

NOTE.—The average depth of water in the Reservoir for the year was 15 ft. 5 in., equal to an elevation of 211 ft. 5 in. above zero.

SCHEDULE No. 10.

STATEMENT OF MAINS LAID DURING THE YEAR 1904.

Street, Avenue, Etc	Side of Street.	Location	Length in Feet.
36-IN. MAIN :			
Bathurst St	West	From 24-in. x 30-in. branch northerly	500
20-IN. MAINS :			
Dupont St	South	" St. George to Poplar Plains	267
Davenport Rd	Centre	" Dupont to C. P. R. R.	192
Poplar Plains Rd..	East	" C. P. R. R. to creek	664
Total			1,123
16-IN. MAIN :			
St. George St	East	" Bloor to Dupont St.	3,117½
12-IN. SUB-MAINS :			
Dovercourt Rd	West	Connection near Queen	38
Don Esplanade	West	From Cornwall to Gerrard St.	841½
Exhibition Rd	South	" Exhibition main to bridge	1,700
Queen west	North	" Dundas St. to Gladstone Ave	2,215½
Spadina Ave	East	" Adelaide St. 393 ft. n	416
Total			5 211
6-IN. SUB-MAINS :			
Albany Ave	West	" Dupont St. 193 ft. n.	210
Bain Ave	North	" Broadview Ave. 324 ft. e.	375
Beatrice St	West	" 675 ft. n. of College, 258 ft. n.	258
Beatrice St	West	" 290 ft. s. of College, 112 ft. s.	112
Bernard Ave	North	" 145 ft. w. of Admiral Rd. to 10 ft. w. of St. George St.	262
Birtle St	North	" Dundas St. to 680 ft. w.	730
Chestnut Park	North	" 573 ft. n.-w. of Roxboro', 1,010 ft. w.	1,010
Chestnut Park Rd.	West	" Roxboro' Av. to Chestnut Park	306
Crawford St	West	" Bloor St., 606 ft. north	654½
Dearborn Ave	South	" Broadview Av., 617 ft. east (1903) ..	667½
Don Esplanade	West	" 420 ft. n. of Eastern Av., 52 ft. n.	50
Dresden Ave	North	" Pape Av., 435½ ft. west	446½
Dundonald Ave. ..	North	" Yonge St. to Church St.	984½
Empress Cresc	South	" 370 ft. w. of Dowling Av., 250 ft. w.	250
Galley Ave.	North	" 296 ft. w. of Sorauren Av., 598 ft. w.	598
Grace St	West	" College St., 497 ft. north	510
Hampton Ave	West	" Hogarth Av., 474 ft. south	508
Havelock St	West	" College St., 293 ft. north	302
Hepbourne St	North	" Concord Av., 141 ft. west	160½
Jefferson Ave	West	" Liberty St., 459½ ft. south	545½
Jones Ave	West	" Queen St., 609½ ft. north	629½
Kippendavie Ave..	West	" 485 ft. n. of Kew Beach, 307 ft. n.	307
Lamb Ave	South	" a pt. 200 ft. e. of Sumach on Amelia, east	150
Lansdowne Ave ..	West	" 490 ft. n. of Wallace Ave., 580 ft. n.	580
Lenty Ave	West	" Violet Av., 114 ft. north	167
Logan Ave	West	" Hogarth Av. to Wolfrey Av.	324
Lowther Ave	South	" Madison Av., 128 ft. east	114
Mowat Ave.	West	" King Street, 407 ft. south	407

SCHEDULE No. 10—Continued.

STATEMENT OF MAINS LAID DURING THE YEAR 1904.

Street, Avenue, Etc.	Side of Street.	Location.	Length in Feet.
Paton Rd	North ..	From Lansdowne Av., 630 $\frac{3}{4}$ ft. west	652 $\frac{1}{2}$
Palmerston Ave ..	West	" College St. to Bloor St.....	3,233
Palmerston Ave ..	East	" " "	3,233
Powell Ave	West	" 128 ft. s. of Maple Av., south ..	89 $\frac{1}{2}$
Roxborough Ave..	North	" 416 ft. e. of Avenue Rd. to 1,090 ft. west of Yonge	454 $\frac{1}{2}$
Simpson Ave.....	North	" 306 ft. w. of Howland Rd., west....	84
Springhurst Ave..	West	" 350 ft. s. of King St., 48 ft. south ..	48
Symington Ave. ..	West	" 500 ft. s. of Royce Ave., 417 ft. s. .	418
West Ave	West	" 98 ft. n. of South Av., 186 $\frac{1}{2}$ ft. n. .	186 $\frac{1}{2}$
Withrow Ave	North	" 658 ft. east Broadview, 411 ft. e....	411
Wolfrey Ave.....	North	" Logan Av., 403 ft. west	419
Total			20,877 $\frac{1}{2}$
4 IN. SUB-MAINS :			
Hogarth Ave.....	North	" Logan Av. w. to old main 159 ft. .	175 $\frac{1}{2}$
Sackville Pl	North	" 110 ft. e. of Bowman Av., east	68
Ulster St.	South	" Palmerston Av., 150 ft. west	172
Total			415 $\frac{1}{2}$

Mains throughout the City of all sizes and descriptions, including those on Streets, Government, Private and other Property, at end of the Year 1904.

Size.	Total length in feet in use at end of 1903.	Put in during 1904.	Abandoned during 1904.	Total length in feet in use at end of the year 1904.
36-inch main	2,780	500	.....	3,280
30-inch "	11,292	.....	.....	11,292
24-inch "	27,779	.....	.....	27,779
20-inch "	3,953	1,123	.....	5,076
16-inch "	325	3,117 $\frac{1}{2}$	.....	3,442 $\frac{1}{2}$
12 inch "	248,203 $\frac{3}{4}$	5,211	.....	253,414 $\frac{1}{4}$
10 inch sub-mains.....	14,195	.....	.....	14,195
8-inch "	7,275	.....	.....	7,275
6-inch "	1,022,016 $\frac{1}{2}$	20,877 $\frac{1}{2}$	.....	1,042,893 $\frac{1}{2}$
4 inch "	47,749 $\frac{1}{2}$	415 $\frac{1}{2}$	.....	48,165
3 inch "	10,586	.....	.....	10,586
2 inch and 1-inch service mains ..	5,943 $\frac{1}{2}$	.....	.....	5,943 $\frac{1}{2}$
Old 8 inch cast iron mains	6,085	.....	.....	6,085
Old 8 inch cement main	1,240	.....	.....	1,240
Totals	1,409,423	31,244 $\frac{1}{2}$	.....	1,440,667 $\frac{1}{2}$

Total length in use at end of year, 1,440,667 $\frac{1}{2}$ feet, or 272.853 miles.

SUMMARY OF VALVES ON STREETS AT END OF 1904.

Size and Description.	In use at end of 1903.	Put in during 1904.	Taken out dur. ing 1904.	Total in use at end of 1904.
STOP VALVES :				
36 inches.....	4	1	.....	5
30 ".....	8	.....	1	7
24 ".....	17	.....	.....	17
20 ".....	2	4	.....	6
16 ".....	.....	2	.....	2
12 ".....	459	9	1	467
10 ".....	6	.....	.....	6
9 ".....	6	.....	.....	6
8 ".....	12	.....	.....	12
6 ".....	1,734	36	.....	1,820
4 ".....	82	2	.....	84
3 ".....	29	.....	.....	29
Totals.....	2,409	54	2	2,461
CHECK VALVES.				
36 inches.....	5	.....	.....	5
30 ".....	4	.....	.....	4
24 ".....	1	.....	.....	1
20 ".....	1	.....	.....	1
12 ".....	11	1	.....	12
6 ".....	45	2	.....	47
Totals.....	67	3	.....	70

SCHEDULE No. 11.

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1904.

Street Avenue, etc.	Side of Street.	Location.
Albany Ave	West	191 feet north of Dupont Street.
Bain Ave	North	322 feet east of Broadway Avenue.
Beatrice St	West	677 $\frac{1}{2}$ feet north of College Street.
Bernard Ave.....	"	16 feet south of Dupont Street, 4 way.
" "	"	423 " " " " "
" "	"	742 " " " " "
Birtle St.....	North	288 $\frac{1}{2}$ feet west of Dundas Street.
" "	"	677 $\frac{1}{2}$ " " " " "
Chestnut Park....	North-East..	679 $\frac{1}{2}$ feet north west of Roxboro, 3 way.
" "	North	961 " " " " "
" "	"	1,304 " " " " "
Chestnut Park Rd.	West	57 feet north of Roxboro (1st leg).
Chicora Ave.	North	600 feet west of Avenue Rd.
Church St	West	175 feet south of Front Street, 3 way.
Crawford St.....	"	304 feet north of Bloor Street.
" "	"	603 " " " " "
D'Arcy St	North	North east corner of Spadina, 3 way.
Don Esplanade ..	West	S.W. Cor. of Gerrard and bridge, 4 way.
" "	"	123 $\frac{1}{2}$ feet south of Gerrard (Kemp's) 4 way.
Dresden Ave	North	432 $\frac{1}{2}$ feet west of Pape Avenue.
Dundonald Ave...	"	342 feet west of Church Street.
" "	"	365 $\frac{1}{2}$ feet east of Yonge Street.
Dundas St.....	South	South-west cor. of Dundas and Sorauren, 3 way
Empress Cres	"	620 feet west of Dowling Avenue.
Front St.....	"	88 feet west of Scott Street, 4 way.
" "	North	138 feet west of York Street, "
Galley Ave.....	"	589 $\frac{1}{2}$ feet west of Sorauren Avenue.
" "	"	857 $\frac{1}{2}$ " " " " "
Gladstone Ave....	West	350 feet south of College Street, 3 way.
Grace St	"	494 feet north of College Street.
Hampton Ave.....	"	471 feet south of Hogarth Avenue.
Havelock St	"	292 feet north of College Street.
Jefferson Ave	"	493 feet south of Liberty Street, 3 way.
Jones Ave.....	"	305 $\frac{1}{2}$ feet north of Queen Street East.
" "	"	607 $\frac{1}{2}$ " " " " "
Kendal Ave	"	18 $\frac{1}{2}$ feet south of Dupont Street, 4 way.
" "	"	304 $\frac{1}{2}$ " " " " "
" "	"	775 $\frac{1}{2}$ " " " " "
Kippendavie Ave..	"	788 $\frac{1}{2}$ feet north of Kew Beach.
Lansdowne Ave ..	"	65 $\frac{3}{4}$ feet north of Lappin Avenue.
Manning Ave	"	307 $\frac{1}{2}$ feet south of Bloor Street.
" "	"	926 $\frac{1}{2}$ " " " " 3 way.
Mowat Ave.....	"	404 $\frac{1}{2}$ feet south of King Street.
McPherson Ave ..	North	20 feet west of Yonge Street, 3 way.
Palmerston Ave ..	West	530 $\frac{1}{2}$ feet south of Bloor Street, 4 way.
" "	"	164 feet north of Harbord Street. 4 way.
" "	"	217 feet north of Ulster Street, "
" "	"	313 $\frac{1}{2}$ feet south " " " "
" "	"	281 feet north of College Sreet "
" "	East	228 $\frac{1}{2}$ feet south of Bloor Street, "
" "	"	819 $\frac{1}{2}$ " " " " "
" "	"	55 $\frac{1}{2}$ " Harbord Street, "
" "	"	13 " Ulster Street, "
" "	"	574 $\frac{1}{2}$ feet north of College Street, "

SCHEDULE No. 11—Continued.

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1904.

Street, Avenue, Etc.	Side of Street.	Location.
Paton Rd	North	605 $\frac{3}{4}$ feet west of Lansdowne Avenue.
Queen St. W.	"	121 $\frac{1}{2}$ feet east of Northcote Avenue, 3 way.
"	"	148 $\frac{1}{2}$ feet east of Beaconsfield Ave. "
"	"	136 $\frac{3}{4}$ feet east of Lisgar Street, "
"	"	144 $\frac{1}{2}$ feet east of Dovercourt Road, "
"	"	149 $\frac{1}{4}$ feet east of Fenning Street, "
"	"	172 feet west of Dundas Street, "
Roxboro' St.	"	687 $\frac{3}{4}$ feet east of Avenue Road.
St. Patrick St.	"	North-east corner of Spadina Ave., 3 way.
Sorauren Ave.	East	100 feet south of Dundas Street.
Spadina Ave.	"	305 $\frac{1}{2}$ feet north of Adelaide Street, 3 way.
Symington Ave.	West	914 feet south of Royce Avenue.
Trinity College ..	North	North side of College Bldgs., 3 way.
University Ave.	West	Opp. North-west Cor. of Armouries Buildings.
Victoria Street....	East	200 feet south of Adelaide Street, 3 way.
Wolfrey Ave.	North	401 feet west of Logan Avenue.

3-WAY HYDRANTS REPLACING 2 WAY ALREADY IN POSITION.

Adelaide Street ..	North	22 $\frac{1}{2}$ feet west of Jarvis Street.
Adelaide Street ..	North	253 feet west of Francis Street.
Bay Street.....	East	South-east corner of King Street.
Berkeley Street ..	East	North-east corner of Wilton Avenue.
Bond Street	East	South east corner of Gould Street.
Bulwer Street	North	North-west corner of Soho Street.
Church Street	West	North-west corner of King Street.
Colborne Street ..	North	210 feet west of West Market Street.
Don Esplanade ..	East	490 feet N. of Queen (removed from W. side).
Eastern Avenue ..	North	Opposite crematory.
Front Street	North	255 feet east of John Street.
Gerrard Street.	South	South-east corner of Sackville Street.
King Street	South	83 $\frac{1}{2}$ feet west of West Market Street.
King Street	South	382 $\frac{1}{2}$ feet east of Yonge Street.
Louisa Street	North	112 feet east of Teraulay Street.
Niagara Street	West	South-west corner of Queen Street.
Niagara Street....	South	South west corner of Portland Street.
Queen Street.....	North	150 feet west of Sumach Street.
Queen Street	South	237 feet east of York Street.
Queen Street.....	North	112 feet east of Soho Street.
Queen Street	South	South-west corner of Dufferin Street.
Richmond Street..	North	295 feet west of John Street.
Richmond Street..	North	North-west corner of York Street.
Richmond Street..	North	North east corner of Simcoe Street.
River Street	West	South-west corner of Spruce Street.
Sackville Street ..	East	South-east corner of Spruce Street.
Sorauren Avenue..	West	401 feet south of Dundas Street.
Wellington Avenue	North	300 feet west of Bathurst Street.
William Street....	East	North east corner of Queen Street.

2-WAY HYDRANTS REMOVED FROM OFF THE STREETS.

Bell Street.....	North	326 feet east of River Street.
Dundas Street....	North	Opposite Sorauren Avenue.
Roxboro' Street ..	North	225 feet east of Cluny Avenue.
University Avenue	East	260 $\frac{1}{4}$ feet north of Osgoode Street.

NOTE.—The hydrant on Don Esplanade was removed to the east side of the street near railway.

 SUMMARY OF HYDRANTS.

Number of hydrants of all kinds on streets at end of 1903	3,048
Number of hydrants on private and other property at end of 1903	91
	<hr/> 3,139
There were removed from off the streets, four 2-way hydrants and twenty-nine 2-way hydrants were replaced by 3-way hydrants.....	33
	<hr/> 3,106
Number of additional hydrants set on streets during 1904	69
Number of additional hydrants set on private property, 1904	1
	<hr/> 3,176
3-way hydrants replacing those already on streets	29
	<hr/> 3,205
	<hr/> <hr/>

SCHEDULE No. 12.

TOTAL LIST OF ALL VALVES PLACED IN POSITION DURING THE YEAR 1904, SHOWING THE SIZE, LOCATION, etc.

Street, Avenue, Etc.	Side of Street.	Location.
36-INCH STOP VALVES:		
Bathurst Street ..	West	At north line of Collage Street.
20 INCH STOP VALVES:		
Davenport Road ..	West	North line of Dupont Street.
Dupont Street	South	18 feet west of east line of St. George Street.
Dupont Street	South	25 feet west of Davenport Road
High Level Station	South	12 feet west of Engine House.
16 INCH STOP VALVES:		
St. George Street ..	East	North line of Bloor Street.
St. George Street ..	East	South line of Dupont Street.
12-INCH STOP VALVES:		
Adelaide Street ..	North	24 feet west of ea t line of Spadina Avenue.
Don Esplanade ..	West	North line of Cornwall Street.
Don Esplanade ..	West	Opposite e. line of Kemp's Factory near Gerrard Street bridge.
Queen Street w....	North	West line of Dundas Street.
Queen Street w....	North	East line of Dovercourt Road.
Queen Street w....	North	West line of Dovercourt Road.
Spadina Avenue	East	North line of Adelaide Street.
Dupont Street	North	West side of 16-feet main.
Exhibition Road ..	South	Opposite w. line of St. to New Fort, west of Strachan Avenue bridges.
6-INCH STOP VALVES:		
Albany Avenue ..	West	North line of Dupont Street.
Bain Avenue	North	East line of Broadview Avenue.
Bernard Avenue ..	"	West line of St. George Street.
Bernard Avenue ..	"	West of 16" main.
Bernard Avenue ..	"	East line of St. George Street.
Birtle Street	"	West line of Dundas Street
Chestnut Pk.....	West	North " Roxboro Avenue.
Crawford Street ..	"	North " Bloor Street.
Dearborne Avenue	South	East " Broadview Avenue.
Dresden Avenue ..	North	West " Pape Avenue.
Dundonald	"	East " Yonge Street.
Dundonald	"	West " Church Street.
Grace Street	West	North " College Street.
Hampton	"	South " Hogarth Avenue.
Havelock	"	North " College Street.
Hepburn	North	West " Concord Avenue.
Jefferson	West	South " Liberty Street.
Jones	"	North " Queen Street.
Lowther	South	East " Madison Avenue.
Lowther	"	West of 16" main.
Paton Road	North	West line of Lansdowne Avenue.
Palmerston Ave... West	North " College Street.	
Palmerston Ave... "	South " Harbord Street.	
Palmerston Ave... "	North " " "	
Palmerston Ave... "	South " Bloor Street.	

SCHEDULE No. 12—Continued.

TOTAL LIST OF ALL VALVES PLACED IN POSITION DURING THE YEAR 1904, SHOWING THE SIZE, LOCATION, ETC.

Street, Avenue, etc.	Side of Street.	Location.	
Palmerston Ave...	East	North line of	College Street.
Palmerston Ave...	"	South "	Harbord Street.
Palmerston Ave...	"	North "	Harbord Street.
Palmerston Ave...	"	South "	Bloor Street.
Prince Arthur	South	East "	St. George Street.
Prince Arthur	"	West "	" "
Queen W.....	"	East "	Dovercourt Road.
St. George Street..	East	South "	Lowther Avenue.
St. George Street..	West	North "	Bernard Avenue.
Wolfrey Avenue....	North	West "	Logan Avenue.
Esplanade Street .	"	East "	Bay Street (omitted)
4-INCH STOP VALVES :			
Hogarth.....	North.....	West "	Logan Avenue.
Ulster Street	South.....	West "	Palmerston Avenue.
12-IN. CHECK VALVES :			
Don Esplanade ...	West	North "	Cornwall Street.
6-IN. CHECK VALVES :			
Palmerston Ave...	West	North "	College Street.
Palmerston Ave. ..	East	North "	" "

VALVES REMOVED FROM OFF THE STREETS DURING 1904.

Street, Avenue, Etc.	Side of Street.	Location.
30-IN. STOP VALVES :		
Bathurst Street ..	West	North line College Street.
12 IN. STOP VALVES :		
Poplar Plains Road	East	South line of Pumping Stn. grounds.

SCHEDULE No. 13.

STATEMENT OF HOUSE SERVICES LAID DURING 1904.

Name of Street.	Size of Services.							
	$\frac{1}{2}$ -inch.	$\frac{3}{8}$ -inch.	$\frac{3}{4}$ -inch.	1-inch.	2-inch.	3-inch.	4-inch.	6-inch. 8-inch.
Adelaide W...	5	1	....	2	1	1	2	....
Adelaide E. ....	...	...	...	...	...	...	1	....
Albany Ave....	16	7	....	...	...	...	...	....
Augusta Ave....	2	3	....	...	...	...	...	....
Abbs	2	...	....	...	...	...	...	....
Argyle.....	2	...	....	...	...	...	...	....
Avenue Rd.	2	...	1	...	2	1	...	....
Arthur	5	...	....	...	...	...	...	....
Abell.....	...	...	....	...	...	...	1	....
Alice .....	...	...	....	...	1	...	...	....
Admiral Rd....	...	...	1	...	1	...	...	....
Beatrice	36	...	....	...	...	...	...	....
Blackmore's La.	1	...	....	...	...	...	...	....
Bernard Ave.	1	63	....	...	...	...	...	....
Bloor W.	6	1	3	1	1	...	...	....
Bloor E. ....	...	...	....	...	...	...	4	....
Binscarth Rd....	...	...	2	...	...	...	...	....
Brock Ave.	24	...	....	...	...	...	...	....
Badgerow Ave..	2	...	....	...	...	...	...	....
Brooklyn Ave..	15	...	....	...	...	...	...	....
Beatty Ave.....	...	5	....	...	...	...	...	....
Bellwoods Ave..	17	1	1	...	...	...	...	....
Brookfield Ave..	1	...	....	...	...	...	...	....
Bolton Ave.....	10	...	....	...	...	...	...	....
Bathurst.....	25	5	...	1	...	...	...	....
Brighton Ave...	2	...	....	...	...	...	...	....
Broadview Ave..	4	...	....	...	...	...	...	....
Burnfield Ave..	4	...	....	...	...	...	...	....
Bismark Ave....	6	...	....	...	...	...	...	....
Brunswick Ave..	1	...	1	...	1	...	...	....
Bartlett Ave.	14	...	....	...	...	...	...	....
Barton Ave.....	1	...	....	...	...	...	...	....
Birch Ave	3	...	....	...	...	...	...	....
Baldwin	1	...	....	...	...	...	...	....
Bedford Rd ....	...	...	2	1	1	...	...	....
Bleeker.....	2	...	....	...	...	...	...	....
Booth Ave.....	4	...	....	...	...	...	...	....
Bain Ave	10	...	....	...	...	...	...	....
Birtle Ave.	9	...	....	...	...	...	...	....
Beverley	2	...	....	...	...	...	...	....
Bay .....	...	...	....	...	...	...	1	....
Britain	1	...	....	...	...	...	...	....
Beachell .....	...	...	....	...	...	1	...	....
Beaconsfield Av.	2	...	....	...	...	...	...	....
Bond .....	...	...	....	...	...	...	1	....
Broadview Av..	2	...	....	...	...	...	...	....

HOUSE SERVICES LAID DURING 1904.—*Continued.*

Name of Street.	Size of Services.								
	$\frac{1}{2}$ -inch.	$\frac{5}{8}$ -inch.	$\frac{3}{4}$ -inch.	1-inch.	2-inch.	3-inch.	4-inch.	6-inch.	8-inch.
Claremont.	3								
Clinton				1					
College	13	1	1				2		
Carroll	3								
Crawford	13	1	1						
Concord	18								
Centre Ave	2			1					
Clark	1								
Cottingham	9	1							
Crescent Rd.			2	1	1				
Church	2		1				1		
Cluny Ave.				2					
Chestnut	5								
Chestnut Pl.	1								
Chestnut P'k Rd ..			3	5	2				
Colbourg Ave	2								
Charles	3								
Christie	6								
Chesley Ave.	1								
Cummings	1								
Clifford	1								
Callendar	1								
Cross	1								
Carr	1								
Chicora Ave	3								
Cowan Ave		3							
Collier	1								
Cypress	2								
Curzon	1								
Close Ave.		2							
Castle Frank Rd ..				1					
Carlaw Ave	4	1							
Commercial La. ...	1								
Delaware Ave	35	1							
Duchess	2								
Defries	1								
Dundas	31		2		1				
Dufferin	9		1						
Davenport Rd. ...	18	1							
Dupont	32	3	2						
Dovercourt Rd. ...	35	3	1	1					
Dale Ave				1					
Duncan				1					
Dunn Ave.			1						
Don Esplanade.					2			1	
De Grassi	2								
Danforth Ave	1								
Dewson	6								

HOUSE SERVICES LAID DURING 1904—*Continued.*

Name of Street.	Size of Services.								
	$\frac{1}{2}$ -inch.	$\frac{3}{4}$ -inch.	$\frac{3}{4}$ -inch.	1-inch.	2-inch.	3-inch.	4-inch.	6-inch.	8-inch.
Dresden Ave. . .	6								
Dagmar Ave . .	1								
Denison Ave . .	2								
D'Arey	1								
Euclid Ave . . .	41	7							
Empress Crescet.	2								
Elm Ave					1				
Englewood Ave.	1								
Esplanade East.	2			2					
Elliott	2								
Edward	2								
Elmer Ave	2				1				
Elizabeth	2								
Eastern Ave. . . .	3		1						
First Ave.	35								
Fuller	8	1		1					
Frederick							1		
Fisher	1								
Front W	1						2	2	
Front E	1			1					
Florence	2				1				
Frizzell.	1								
Follis Ave	4								
Farley Ave	6								
Franklyn Ave. . .	2								
Foxley	1								
Givens	10								
George					1				
Gerrard E	13	1					1		
Gladstone Ave. .	12		1	2	1				
Grove Ave	3								
Galley Ave. . . .	18								
Golden Ave	2								
Gordon Ave. . . .	3								
Grant	1								
Greenwood Ave.	2			2					
Galt Ave	9								
Gibson Ave	3	1							
Grace	8	1		1					
Gloucester	1	3							
Garnet	3								
Gildersleeve Av.	1								
Harvard Ave. . .	1								
Howland Rd. . . .	7								
Hamburg Ave. . .	6								
Huron	6	14	1		1				
Hogarth Ave. . . .	14								
Hamilton	5								

HOUSE SERVICES LAID DURING 1904—*Continued.*

Name of Street.	Size of Services.							
	$\frac{1}{2}$ -inch.	$\frac{5}{8}$ -inch.	$\frac{3}{4}$ -inch.	1-inch.	2-inch.	3-inch.	4-inch.	6-inch.
Harbord		1						
Huxley	1							
Howard Pk. Ave			1	1				
Homewood Ave.			1					
Halton	6							
Hallam	12	1						
Howland Ave.	5	5		1				
Hickson	1							
Hazelwood Ave.	1							
Hepbourne	5							
Havelock	15							
Humbert	1							
Hampton Ave.	1							
Hagerman	2							
Howie Ave.	1							
Hackney	1							
Isabella					1			
Jameson Ave.	2	1						
Jones Ave.	25				1			
Jarvis	2		1	1	2		1	
Jefferson					1			
James							1	
Kendal Ave.		6						
King W.	2	7	1	3	2	1	4	3
King E.	1							
Kew Beach	2							
Kippendavie Av.	21							
Kenilworth Ave.	4							
Lamb Ave.	14							
Leslie	7							
Lee Ave.	6							
Lansdowne Ave.	27							1
Lindsay Ave.	9							
Langley Ave.	8				1			
Leury Ave.	6							
Lowther Ave.			1	1			1	
Louisa								1
Leonard Ave.					1			
Lucas	2							
Leopold	1							
Lippincott	6	2						
Lakeview Ave.	1							
Logan Ave.	2							
Lisgar	1							
Lennox	1							
Mill	1							
Macpherson Ave	10	4						
Mutual	10							

HOUSE SERVICES LAID DURING 1904—*Continued.*

Name of Street.	Size of Services.								
	$\frac{1}{2}$ -inch.	$\frac{3}{4}$ -inch.	$\frac{1}{2}$ -inch.	1-inch.	2-inch.	3-inch.	4-inch.	6-inch.	8-inch.
Madison Ave..	.....	3	.....	1	.....	.....	.....	.....	.....
Margueretta....	19	2	.....	.....	.....	.....	.....	.....	.....
Macdonell Ave..	6	2	.....	.....	.....	.....	.....	.....	.....
Maple Ave.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Manning Ave... 14	.....	1	.....	.....	.....	.....	.....	.....	.....
Markham	24	8	1	.....	.....	.....	.....	.....	.....
Morse	5	.....	.....	.....	.....	1	.....	.....	.....
Montrose Ave.. 28	.....	.....	.....	.....	.....	.....	.....	.....	.....
Munro	2	.....	.....	.....	.....	.....	.....	.....	.....
Millicent	15	.....	.....	.....	.....	.....	.....	.....	.....
Mowat Ave.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Melville Ave.. 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
Muir Ave	8	.....	.....	.....	.....	.....	.....	.....	.....
Maitland	1	.....	.....	.....	.....	.....	.....	.....	.....
Major .....	.....	.....	.....	.....	.....	.....	1	.....	.....
Melinda .....	.....	.....	.....	.....	.....	.....	.....	1	.....
Maynard Ave... 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maud	1	.....	.....	.....	.....	.....	.....	.....	.....
Marion	2	.....	.....	.....	.....	.....	.....	.....	.....
McCaul	1	.....	.....	1	.....	.....	.....	.....	.....
McMaster Ave.. 10	.....	3	.....	.....	.....	.....	.....	.....	.....
McKenzie Crest. 4	.....	.....	1	.....	.....	.....	.....	.....	.....
McDonell Sq....	.....	.....	.....	.....	.....	1	.....	.....	.....
Niagara.....	.....	.....	.....	.....	.....	1	.....	.....	.....
N. Sherbourne..	.....	.....	.....	1	1	.....	.....	.....	.....
Northumberland	1	.....	.....	.....	.....	.....	.....	.....	.....
N. Beaconsfield.	1	.....	.....	.....	.....	.....	.....	.....	.....
Natalie	1	.....	.....	.....	.....	.....	.....	.....	.....
New	1	.....	.....	.....	.....	.....	.....	.....	.....
Ossington Av... 34	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontario	1	.....	1	.....	.....	.....	.....	.....	.....
Oak	2	.....	1	.....	.....	.....	.....	.....	.....
O'Connell Av... 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
Palmerston Av.. 13	.....	8	2	.....	.....	.....	.....	.....	.....
Poplar Plains Rd	.....	.....	2	.....	.....	.....	.....	.....	.....
Pears Av.	4	.....	.....	.....	2	.....	.....	.....	.....
Pacific Ave.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Pape Ave.....	3	.....	.....	1	.....	.....	.....	.....	.....
Pearson Ave... 6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pembroke 1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poucher	1	.....	.....	.....	.....	.....	.....	.....	.....
Powell Ave.....	.....	2	.....	.....	.....	.....	.....	.....	.....
Piper .....	.....	.....	.....	.....	.....	1	.....	.....	.....
Perth Ave..... 2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Park Rd. ....	.....	.....	2	.....	1	.....	.....	.....	.....
Pine Hill Rd....	.....	.....	1	.....	.....	.....	.....	.....	.....
Plymouth Av... 1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poulette .....	.....	1	.....	.....	.....	.....	.....	.....	.....

HOUSE SERVICES LAID DURING 1904—*Continued.*

Name of Street.	Size of Services.								
	$\frac{1}{2}$ -inch.	$\frac{3}{4}$ -inch.	$\frac{1}{2}$ -inch.	1-inch.	2-inch.	3-inch.	4-inch.	6-inch.	8-inch.
Power					1				
Preston Ave.	1								
Portland	3	1					1	1	
Prince Arthur			1						
Peel Ave.	1								
Paton Rd.					1				
Queen E.	15	2	1		1			1	
Queen W.	13	2	2	2	1				
Richmond W.					1			1	
Russett Av.	10								
Rathnally Av.	16								
Robert			2						
Rusholme Rd.	2	2	2						
Roxboro' E.		2	8	1					
Roxboro' W.	10	3	2						
Rosedale Rd.				1			1		
Rose Ave.	2								
Riverdale Pk.	1								
Roncesvalles Av.						1			
Robinson	2								
River.	3								
Roseberry Ave.	2								
Spadina Rd.	1	9	3				1		
Smith	16								
Summerhill Av.	4								
Shaw	18	1		1					
Salem Ave.	13								
Sorauren Av.	18	1	1				1		
Simpson Ave.	18								
Sussex Ave.	1								
Springhurst Av.		2							
Spencer Ave.		3							
St. Alban's	1								
Sydenham	1								
St. Lawrence	2								
Sterling Rd.		1							
Sherbourne	1								
St. Clarens Ave.	7								
Sackville	1								
Symington Ave.	5								
St. Helens Ave.	6								
Stafford	2								
Sheridan Ave.	2	1							
St. Joseph					1				
Soho		1							
St. George	2	2							
South Ave.	12								
Sumach	1								

HOUSE SERVICES LAID DURING 1904—*Continued.*

Name of Street.	Size of Services.							
	$\frac{1}{2}$ -inch.	$\frac{3}{4}$ -inch.	1-inch.	2-inch.	3-inch.	4-inch.	6-inch.	8-inch.
Searth Rd			1					
Strange				1				
Spruce						1		
Sackville Pl.	5							
Spadina Ave.							1	
Saulter	1							
Salisbury Ave	1							
Tranby Ave.	2							
Temperance						1		
Taylor	3							
Toronto						1		
Treford	1							
Trinity					1			
Tiverton	6							
Tacoma Ave.	2							
University	1							
Ulster	2							
Union	2							
Vermont Ave.	4							
Victor Ave.	3							
Violet Ave.	3							
Victoria		2			1			
Van Horne	6							
Wickson Ave.	4							
Wright Ave.	10			1				
West Lodge Ave.	3					1		1
Woodbine Ave.	6							
Wilson Ave.	3	2	1					
Winchester	3			1				
Walmer Rd		12	6					
Wells	6	1						
Wilton Ave	1							
Waverley Rd.	4	1						
Withrow Ave.	9	1						
Westmoreland A.	7							
West Ave.	5							
Water.	1							
Wood.	1							
Wellesley	2		1		1			
West Marion.								
Wellington W.		1			1	2	2	4
Wellington Pl.			1					
William	2							
West Market.					1		1	
Wardell	1							
Woodsley	3							
Windsor.							1	
Walker Ave.	2							

HOUSE SERVICES LAID DURING 1904—*Continued.*

Name of Street.	Size of Services.							
	$\frac{1}{2}$ -inch.	$\frac{3}{4}$ -inch.	$\frac{3}{4}$ -inch.	1-inch.	2-inch.	3-inch.	4-inch.	6-inch. 8-inch.
Wolfrey Ave .	6	.....	.....	.....	.....	.....	.....	.....
Wallace Ave...	1	.....	.....	.....	.....	.....	.....	.....
Yonge..	7	1	.....	.....	3	.....	2	.....
Yarmouth Rd...	1	.....	.....	.....	.....	.....	.....	.....
York . . . . .	.....	.....	1	.....	.....	.....	.....	1
Yorkville Ave..	.....	.....	.....	2	.....	.....	.....	.....

SERVICES LAID ON ISLAND.

Lakeshore Ave.	1	.....	.....	.....	1	.....	.....	.....
Macleans La....	1	.....	.....	.....	.....	.....	.....	.....

Total number of Services laid during 1904—2,036.

SCHEDULE No. 14.

STATEMENT OF HOUSE SERVICES IN USE TO 31ST DECEMBER, 1904.

Total number of services in use previous to 1874.....	1,375
“ “ laid during 1874	552
Number of new “ “ 1875.....	842
“ renewed services laid during 1875.....	24
“ new “ “ 1876 by permit	141
“ renewed “ “ 1876	12
“ new “ laid by Commission 1876	602
“ renewed “ “ “ 1876	258
“ new “ “ “ 1877	1,006
“ renewed “ “ “ 1877	161
“ new “ laid by Corporation 1878	2,189
“ renewed “ “ “ 1878	103
“ new “ “ “ 1879	1,861
“ renewed “ “ “ 1879	97
“ new “ “ “ 1880	1,014
“ renewed “ “ “ 1880	41
“ new “ “ “ 1881	2,654
“ renewed “ “ “ 1881	117
“ new “ “ “ 1882	1,826
“ renewed “ “ “ 1882	44
“ new “ “ “ 1883	1,766
“ renewed “ “ “ 1883	54
“ new “ “ “ 1884	2,087
“ renewed “ “ “ 1884	12
“ new “ “ “ 1885	2,344
“ renewed “ “ “ 1885	22
“ new “ “ “ 1886	2,936
“ renewed “ “ “ 1886	19
“ new “ “ “ 1887	3,250
“ renewed “ “ “ 1887	65
“ new “ “ “ 1888	2,990
“ renewed “ “ “ 1888	65
“ new “ “ “ 1889	3,288
“ renewed “ “ “ 1889	68
Number of new services laid by Corporation 1890	2,136
“ renewed “ “ “ 1890	55
“ new “ “ “ 1891	2,058
“ renewed “ “ “ 1891	53
“ new “ “ “ 1892	1,151
“ renewed “ “ “ 1892	49
“ new “ “ “ 1893	526
“ renewed “ “ “ 1893	2
“ new “ “ “ 1894	390
“ renewed “ “ “ 1894	11

Number of new services laid by Corporation 1895					319
"	renewed	"	"	1895	38
"	new	"	"	1896	291
"	renewed	"	"	1896	45
"	new	"	"	1897	474
"	renewed	"	"	1897	29
"	new	"	"	1898	504
"	renewed	"	"	1898	32
"	new	"	"	1899	664
"	renewed	"	"	1899	35
"	new	"	"	1900	683
"	renewed	"	"	1900	26
"	new	"	"	1901	1,133
"	renewed	"	"	1901	8
"	new	"	"	1902	1,319
"	renewed	"	"	1902	13
"	new	"	"	1903	1,402
"	renewed	"	"	1903	45
"	new	"	"	1904	2,036
"	renewed	"	"	1904	48
New services in Yorkville at time of annexation.....					448
"	"	Parkdale	"	"	885
Total number of services laid on Island					282

SCHEIDT No 15 - NUMBER AND SIZE OF SERVICES IN USE TO DECEMBER 31ST, 1904.

[illegible]

SCHEDULE No. 16.

No. OF METERS TAKEN OFF FOR REPAIRS AND REPLACED.

	$\frac{1}{2}$ -inch.	$\frac{3}{8}$ -inch.	$\frac{1}{4}$ -inch.	$\frac{1}{8}$ -inch.	$1\frac{1}{2}$ -inch.	2-inch.	3-inch.	4-inch.	5-inch.	6-inch.	
Crown.....	124	38	15	10	11	7	205				
Worth.....		16	20	10	2		48				
Siemens.....	8	8	5	5	6	4	37				
Nash.....	9	5	3	1			18				
Hersey.....	7	7	2				16				
Trident.....	3	2					5				
Keystone.....	1						1				
Standard.....			1	1			2				
Gem.....				4	1		5				
Kennedy.....				1	1		2				
	8	144	76	46	1	31	20	8	4	1	339

SCHEDULE No. 17.

NO. OF METERS IN USE AT CLOSE OF YEAR 1904.

	$\frac{1}{2}$ -inch.	$\frac{3}{8}$ -inch.	$\frac{1}{4}$ -inch.	1-inch.	$1\frac{1}{2}$ -inch.	2-inch.	3-inch.	4-inch.	5-inch.	6-inch.	8-inch.	10-inch.	
Crown.....	540	247	80	....	51	45	48	....	....	....	....	....	1,011
Worth	26	62	138	28	103	36	3	....	....	....	....	....	396
Siemens	54	....	62	46	2	51	31	19	15	10	2	1	293
Nash Disc.....	43	27	27	1	....	....	....	....	....	....	....	....	98
Gem .....	....	....	....	....	....	53	7	4	....	3	....	1	68
Trident Disc.....	26	29	6	....	....	....	....	....	....	....	....	....	61
Kennedy .....	....	....	....	....	....	4	11	7	....	15	....	....	37
Crest .....	....	....	....	....	....	....	2	4	....	....	....	....	6
Union.....	....	....	....	....	....	12	....	....	....	....	....	....	12
Keystone Disc.....	....	9	5	7	....	....	....	....	....	....	....	....	21
Hersey Disc.....	....	21	10	4	....	1	....	....	....	....	....	....	36
Empire .....	....	....	1	....	1	2	....	....	....	....	....	....	4
	54	665	443	308	32	277	132	85	15	28	2	2	2,043

SCHEDULE No. 18.

SIZE AND NUMBER OF NEW METERS PLACED DURING 1904.

	$\frac{1}{2}$ -inch.	$\frac{3}{4}$ -inch.	1-inch.	1-inch.	1 $\frac{1}{2}$ -inch.	2-inch.	3-inch.	4-inch.	5-inch.	6-inch.	
Crown		16	9	5	...	2	6	6	...	...	44
Worth		2	2	3	8	9	...	...	...	...	24
Siemens	1	...	...	1	...	1	2	1	1	1	8
Nash		10	9	8	...	...	...	...	...	...	27
Hersey		12	7	3	...	...	...	...	...	...	22
Keystone		1	4	1	...	...	...	...	...	...	6
Kennedy . . . . .		...	...	...	...	...	1	...	...	...	1
Gem . . . . .		...	...	...	...	26	...	1	...	...	27
Trident		12	8	3	...	...	...	...	...	...	23
Union . . . . .		...	...	...	...	6	...	...	...	...	6
Empire . . . . .		...	...	...	1	...	...	...	...	...	1
Crest . . . . .		...	...	...	...	...	...	1	...	...	1
	1	53	39	24	9	44	9	9	1	1	190

SCHEDULE No. 19.

RETURN OF TEMPERATURE OF WATER FOR YEAR 1904, TAKEN AT THE SHORE CRIB
AND CITY HALL TAP.

Month.	DEGREES FAHRENHEIT.					
	Shore Crib.			City Hall Tap.		
	Highest.	Lowest.	Average.	Highest.	Lowest.	Average.
January	37	33	34.80	39	35	37.36
February	36	33	34.04	39	35	37
March	34	33	33.06	38	35	36.07
April	38	34	34.83	40	35	37.75
May	40	36	36.61	44	38	40.8
June	47	40	42.36	48	44	45.96
July.	47	40	42.70	52	44	47.28
August	55	40	44.25	56	44	41.38
September.....	62	40	51.83	64	45	55.52
October	52	40	44.87	54	44	48.23
November	43	40	41.1	48	42	45.2
December	39	33	36.9	45	37	40.1
Averages for Year	44.16	36.83	39.78	47.25	39.83	42.72

ANALYSIS OF TEMPERATURE.

Shore Crib.

The highest on September 14th, 62 deg.; the lowest on March 4th, 33 deg.; the highest average in September, 51.83 deg.; the lowest average in March, 33.06 deg.

City Hall Tap.

The highest on September 14th, 64 deg.; the lowest on March 4th, 35 deg.; the highest average in September, 55.52 deg.; the lowest average in March, 36.07 deg.

SCHEDULE No. 20.
MAINTENANCE OF DISTRIBUTION, 1904.

	House Services.							Services Taken Out.										Leaks on Mains.							Services moved to suit Sidewalks.
	Leaks.	Burst Inside.	False Reports.	Blown Out.	Dug Out.	Cleaned Out.	On.	Thaw'd out By Elect'y.	Frozen Ser.	2½-inch.	3-inch.	4-inch.	1-inch.	1-inch.	4-inch.	6-inch.	8-inch.	10-inch.	12-inch.	20-inch.	24-inch.	30-inch.	36-inch.		
January	165	62	20	71	145	158	16	108	.....	4	.....	.....	.....	.....	1	4	.....	1	.....	.....	.....	1	.....	
February	229	190	64	90	174	245	40	231	.....	8	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....
March	303	215	48	180	152	286	47	338	353	11	.....	1	1	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
April	235	85	25	23	251	86	20	113	153	.....	1	1	2	.....	8	.....	.....	.....	.....	.....	.....	.....	.....
May	272	35	13	40	337	55	15	70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	222	38	15	24	265	26	12	51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	159	35	24	12	215	37	5	38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	199	18	14	16	260	60	8	46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	191	25	12	21	306	58	7	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	204	19	15	26	296	45	15	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	215	24	11	16	207	61	10	76	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
December	193	53	11	35	172	45	11	64	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	2,587	799	272	554	2,780	1,162	206	1,248	506	23	510	2	4	5	2	84	3	175	2	5	3	3	.....	

SCHEDULE No. 21.

LEAKS ON MAINS DURING THE YEAR 1904.

The following leaks on mains were repaired during the year :

36-inch	3
30-inch.....	3
24-inch.....	5
20-inch.....	2
12-inch.....	75
10-inch.....	1
8-inch.....	3
6-inch.....	84
4-inch.....	2
3-inch.....	0

Total 178 of all sizes.

The cost of repairing these leaks, exclusive of asphalt pavement repairs, was :

Labor.....	\$1,447 69
Material	146 86

Total 1,594 55

Average cost per leak (labor and material)	\$3 95
Average number of leaks per mile of distribution.....	0 65
Average cost per mile.....	5 84

ACCOUNTANT'S STATEMENT of EXPENDITURE FOR 1904.

ACCOUNTS.	\$	c.	\$	c.	\$	c.
GENERAL WORKS.						
Asphalt cleaning.....	28,157	10				
Asphalt flushing.....	10,894	40				
Bridges, repairs and maintenance of.....	6,664	44				
Cleaning gullies.....	7,079	85				
Engineering and expenses.....	26,490	28				
General purpose.....	18,678	07				
Permanent crossings.....	2,622	08				
Roadways.....	16,238	89				
Sidewalks.....	5,175	89				
Snow cleaning off sidewalks.....	11,602	08				
Street cleaning.....	42,025	37				
Street watering (not including water)....	23,406	29				
Scavenging.....	105,608	63				
Stone and wooden curbs.....	737	36				
Street numbering.....	872	92				
Weed cutting.....	996	64				
Private drains.....	34,943	49				
	342,193	78				
Less amounts paid to City Treasurer for private drains.....	36,256	53				
			305,937	25		
SPECIAL WORKS.						
Asphalt repairs.....	16,457	75				
Brook Street wharf repairs.....	1,135	63				
Cottage at Eastern stables.....	450	00				
Centre Island wharf repairs.....	1,496	88				
Danforth Road repairs.....	368	07				
Dundas Street bridge approaches.....	3,981	78				
Dog trapping.....	166	73				
Dredging slips.....	6,010	67				
Essex Street extension.....	180	00				
Extension of Pape Avenue sewer.....	38	80				
Express and cabmen's shelters.....	279	88				
Free bathing.....	2,230	89				
Fence and shed at Eastern stables.....	489	29				
Fuel distribution ..	53	00				
Harbor crib work.....	4,714	18				
Lake Shore Road repairs.....	10,024	94				
Carried forward.....	48,078	49	305,537	25		

SCHEDULE No. 22.

STATEMENT OF QUANTITY OF WATER PUMPED, AND THE COST OF PUMPING, FIGURED ON COAL, WAGES, MAINTENANCE AND INTEREST AND SINKING FUND.

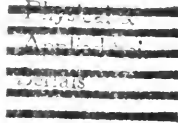
Year.	Total Water Pumped Imp. Gallons.	Total Fuel Pounds.	Cost of Fuel.		Wages.		Total Cost, including Repairs, Fuel, Wages, etc. Main Pump, Station.		Fuel. Cost per 1,000 Galls.	Cents.	Fuel and Wages. Cost per 1,000 Galls.		Cents.	Fuel, Wages and Maintenance Cost per 1,000 Galls.	Total Working Expenses, including Collection of Revenue.		Interest and Sinking Fund.		Total Cost, including Fuel, Wages, Maintenance, Interest and Sinking Fund.	Total Cost per 1,000 Galls. on same.
			\$	c.	\$	c.	\$	c.			\$	c.			\$	c.	\$	c.		
1870.....	441,011,250																			
1871.....	509,908,250																			
1872.....	548,746,840																			
1873.....	586,230,295																			
1874.....	789,434,015																			
1875.....	1,390,706,595	5,003,262	17,156 47	5,838 95	25,886 05	1.23	1.65						1.86							
1876.....	1,625,138,876	6,988,282	19,645 75	6,447 02	30,379 60	1.21	1.60						1.86							
1877.....	2,633,433,932	10,407,992	25,556 29	7,866 70	36,895 23	0.97	1.26						1.40							
1878.....	1,417,370,913	8,120,000	15,196 20	7,140 00	25,246 50	1.00	1.51						1.78							
1879.....	1,610,104,342	10,872,211	19,313 07	7,140 00	29,827 38	1.19	1.63						1.85							
1880.....	1,785,859,706	11,694,808	28,455 72	7,140 00	39,285 25	1.59	1.98						2.19							
1881.....	1,910,430,419	12,391,874	31,410 04	7,473 75	42,529 22	1.64	2.03						2.22							
1882.....	2,108,933,115	11,685,556	30,170 64	8,819 81	43,619 65	1.43	1.84						2.06							
1883.....	2,809,936,484	17,266,979	43,529 08	10,025 72	59,809 65	1.54	1.89						2.12							
1884.....	3,645,442,082	19,920,782	52,325 56	10,812 40	69,355 64	1.44	1.73						1.90							
1885.....	3,537,482,598	18,644,465	46,389 27	12,017 85	65,082 35	1.31	1.64						1.84							
1886.....	4,134,376,998	19,283,371	41,979 82	14,814 40	65,579 74	1.01	1.36						1.58							
1887.....	4,417,938,169	23,283,900	50,651 35	16,968 79	76,597 16	1.13	1.51						1.73							
1888.....	4,041,964,514	20,457,935	46,690 77	19,045 58	76,659 72	1.12	1.58						1.88							
1889.....	4,148,781,634	19,251,940	44,135 10	20,192 39	75,360 77	1.06	1.54						1.81							
1890.....	5,249,760,226	24,615,830	56,239 99	21,847 31	83,136 12	1.03	1.44						1.58							
1891.....	6,534,375,161	29,300,240	60,012 77	22,536 49	89,060 35	0.90	1.24						1.36							
1892.....	6,639,925,656	34,565,875	71,895 25	21,645 34	103,202 91	1.07	1.39						1.54							
1893.....	6,616,921,488	26,013,840	64,702 86	27,078 65	100,013 77	0.97	1.37						1.50							
1894.....	6,589,492,142	26,822,145	61,902 85	25,959 14	103,650 47	0.85	1.22						1.57							
1895.....	6,639,680,218	21,178,879	40,221 85	23,365 49	75,502 63	0.66	1.01						1.13							
1896.....	6,781,187,980	18,606,508	25,307 90	22,529 41	55,626 60	0.57	0.70						0.82							
1897.....	6,733,757,030	20,711,250	26,880 50	22,933 92	57,093 25	0.39	0.73						0.84							
1898.....	7,136,334,102	22,100,145	27,572 00	23,983 92	53,134 40	0.38	0.71						0.74							
1899.....	7,824,348,217	24,682,935	26,684 57	24,770 54	71,279 65	0.34	0.65						0.90							
1900.....	8,064,384,595	24,148,565	38,668 54	27,314 83	80,339 85	0.47	0.80						0.99							
1901.....	8,299,298,465	26,272,640	39,562 56	28,295 43	78,234 31	0.47	0.81						0.94							
1902.....	7,993,916,325	23,769,930	37,409 30	28,170 36	74,625 82	0.46	0.82						0.93							
1903.....	8,735,658,003	30,260,615	54,275 93	31,405 90	93,591 55	0.62	0.98						1.07							
1904.....	9,076,711,575	32,843,325	52,643 51	30,680 11	94,010 62	0.58	1.03						0.91							

ACCOUNTS.	\$	c.	\$	c.	c.
<i>Brought forward</i>	48,078	49	305,537	25	.....
Life Saving Stations.....	715	96			
Lane opening Margueretta Street	200	00			
Northern Stables	7,321	65			
Paving entrance to Anderson Street.....	229	24			
Piling foot of George Street	680	05			
Public conveniences	378	33			
Purchase of tug and 2 scows.....	6,392	00			
Planking Yonge Street wharf.....	1,929	98			
Repaving York Street bridge.....	498	60			
Relaying Ratcliffe Avenue sewer.....	564	72			
Rentals	440	00			
Reconstruction of track allowance.....	2,520	88			
Rounding corner of Gerrard and Broad- view	866	30			
Stone for House of Industry	501	78			
Sewage disposal	237	08			
Sand Pump.....	5,560	67			
Street cleaning (snow)	26,146	28			
Street Railway matters	6,000	55			
Transportation of street sweepings to Island.....	31	33			
Track allowance reconstruction	13,669	48			
Ward's wharf repairs	1,732	14			
Western Destructor, maintenance of.....	10,441	30			
Widening Gerrard Street sidewalk	12	54			
	135,149	35			
Less drawback retained	364	36			
" amount paid Treasurer, tax sales, Margueretta Street opening	375	00			
	739	36			
			134,409	99	
Island Committee			4,147	19	
LOCAL IMPROVEMENT WORKS.					
Sewers	20,451	20			
Pavements.....	344,818	79			
Sidewalks (wooden).....	7,584	40			
" (permanent)	151,563	20			
	159,147	60			
Railway pavements	11,364	92			
			535,782	51	
Bridges, gradings, openings, etc.....			2,004	54	
Personal and Departmental accounts.....			71,757	66	
					1,054,039 14

ACCOUNTS.	\$	c.	\$	c.	\$
WATER WORKS BRANCH.					
<i>Maintenance.</i>					
Maintenance and Distribution.....	34,239	67			
Main Pumping Station.....	41,209	45			
“ “ (coal)	67,086	19			
Meter and machine and blacksmith's shop	14,692	61			
Hydrants and valves.....	6,752	16			
Store house	1,916	39			
Reservoir	5,329	75			
High Level Station	10,737	30			
Cartage	5,297	47			
Miscellaneous	148	45			
Island Water Works	701	23			
Inspection and examination of conduit...	577	26			
Waste prevention.....	1,255	75			
Island Committee.....	835	13			
			190,778	81	
<i>Construction.</i>					
House services	38,710	37			
Less amount paid Treasurer for sundry services.....	11,702	11			
			27,008	26	
<i>Renewals.</i>					
House services	9,023	50			
Short lengths and extra fire hydrants	2,704	21			
			11,727	71	
Less amount paid Treasurer :					
Scrap iron and brass.....	\$440	45			
Sundry extensions of old mains	715	00			
			1,155	45	
			10,572	26	
SPECIAL WORKS.					
New engine Main Pumping Station	63,013	23			
Tunnel and connections	2,893	65			
Bathurst St. 36" main, College to Reservoir	84,059	26			
New meters.....	4,628	29			
Garden seats for Reservoir.....	60	00			
Repairs to Greenhouse at Reservoir	259	13			
New 6" steel conduit	66,616	95			
			221,530	51	
Revenue mains.....			18,550	90	
					468,440 74

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Toronto. Dept. of Public
Works
Report of the city
engineer



Engineering

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